COPY

UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF INDIANA

SOUTH BEND DIVISION

Volume: I
Pages: 1-99
Exhibits: 1-3

UNITED STATES OF AMERICA,
Plaintiff

vs.

CONSOLIDATED RAIL CORPORATION a/k/a CONRAIL,
Defendant & Third-Party Plaintiff

vs.

PENN CENTRAL CORPORATION, et al,
Third-Party Defendants

Docket No. 590-00056
Judge Robert L. Miller, Jr.

DEPOSITION of H. STEPHEN NYE, a witness called by and on behalf of the Defendant Conrail, taken pursuant to the Federal Rules of Civil Procedure, before Heidi B. Stutz, Court Reporter and Notary Public in and for the Commonwealth of Massachusetts, at the offices of Bingham, Dana & Gould, 150 Federal Street, Boston, Massachusetts, on Tuesday, September 28, 1993, commencing at 10:05 o'clock a.m.

APPEARANCES:

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on behalf of the Plaintiff

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I N D E X

P R O C E E D I N G S

MR. DAVIS: Shall I tell you what we're designating him for?

MR. LAMBERT: Sure.

MR. DAVIS: Gemeinhardt designates Stephen Nye of EIS Environmental Engineers, who served as a consultant to Gemeinhardt, to testify on certain matters on both of Conrail's 30(b)(6) deposition notices.

As to the first notice, Mr. Nye is knowledgeable about the use and to some extent the release of hazardous substances at the Gemeinhardt site, as well as certain reports that his firm, EIS, did in the early eighties relating to those subjects. And as to the second notice we designate him as to certain of Gemeinhardt's response actions undertaken at the site, including soil removal, waste water engineering, and so forth, including some things done in response to the E.P.A. orders or IDEM directives.

MR. LAMBERT: Good morning. As a preliminary matter, Mr. Davis has furnished me with two reports prepared by ENSR and we may as well have them marked as exhibits. The first is --

we'll call these Nye Exhibits 1 and 2. The first is dated November 3, 1992, the second is dated February 8, 1993 and they're both on the letterhead of ENSR, which is E-N-S-R, all caps.

0 (Nye Depo. Exhibit Nos. 1 & 2 marked for identification.)

Whereupon:

H. STEPHEN NYE,

having been first duly sworn, was examined and testified as follows:

0 DIRECT EXAMINATION

BY MR. LAMBERT:

Q. I haven't had a chance to read Exhibits 1 and 2, but I did have one question for the witness. There is someone at EIS who is copied on these two reports who is not Mr. Nye, he is a Mr. Daniel Akin. I wondered who he was.

A. He's our senior design engineer.

Q. And who are you, if he's the senior design engineer?

A. I'm the president.

Q. You're the president, okay. Mr. Nye, when did you first become involved with the Gemeinhardt facility in Elkhart?

A. In 1983.

Q. How did you become involved?

A. Two samples, water samples were brought into our laboratory and they were analyzed and our laboratory director came to me one day with the results and indicated I should probably call the people who submitted those and ask them if they were drinking the water and if they were, to tell them not to drink it.

Q. Who submitted the results?

A. The results, we submitted the results to Gemeinhardt.

Q. I beg your pardon, who submitted the samples?

A. Gemeinhardt did.

Q. When were they submitted, do you recall what month?

A. It was in the summer, June. They were on a plant shutdown.

Q. Did anyone tell you what had led Gemeinhardt to take the samples?

A. They said that employees were complaining of odors in the water.

Q. Did they tell you that there had been a

complaint made by one or more employees to the Elkhart Health Department with respect to the drinking water?

A. No.

Q. And you reported the results to Gemeinhardt?

A. Yes.

Q. What did you analyze the samples for?

A. Well, we analyzed them for VOC. That's the only thing I can recall offhand. I'm not sure if we did any other tests. I had to look at the -- VOC I definitely remember.

Q. Any particular VOC's?

A. We used the method -- I believe it was 601 at that time, and that was for all the parameters that the E.P.A. had listed.

Q. Do you remember which VOC's were detected in the samples?

A. We detected tetrachloroethylene, 1,1,1 trichloroethane, we also detected, I believe, trichloroethene. Those are the ones that I recall offhand.

Q. Was there any carbon tetrachloride detected?

A. No.

Q. At any time in your involvement with this facility have you obtained any information suggesting that carbon tetrachloride was ever used at the Gemeinhardt facility?

A. No.

Q. Have you ever inquired specifically whether it was or wasn't?

A. No.

Q. After you reported the results of the two samples to Gemeinhardt what happened next as far as you were concerned?

A. They asked if I could come and explain to them what the results meant, and it was management, so I met with their management.

Q. Who did you meet with?

A. It was Jim Klapp, Glen Holtz, I believe, on the initial -- and Clark Hamilton on the initial -- the first time I went over there. Those were the three that I can recall. There may have been others, but I don't remember them.

Q. Did they tell you what their roles at the plant were?

A. I beg your pardon?

Q. Did they tell you what their positions at the plant were? You said they were management. What were their jobs?

A. Oh, okay. Clark Hamilton was, I believe, plant manager, manager of manufacturing, Jim Klapp was senior vice president, and I don't know Glen Holtz' title at that time.

Q. Are any of them still there?

A. Glen Holtz.

Q. What's his position now?

A. President.

Q. Do you know when he became president?

A. No, I don't.

Q. Can you tell us what you told these gentlemen about what the samples meant?

A. Well, I told them that the levels exceeded what would be acceptable in drinking water and explained to them the risk involved with continued use of the water and I recommended that -- they were wondering how it got in there and I recommended some steps to take to determine where it was coming from.

Q. They purported not to know how those VOC's got into the drinking water well?

A. No, they didn't. They didn't. They had no idea.

Q. Did they tell you that they were not aware that those chemicals had ever been used at the plant?

A. No. We didn't get into a discussion.

Q. Was there any discussion at that meeting as to which solvents were used at the plant?

A. I honestly don't recall at that meeting.

Q. At this point, as far as you know, had the results of the analysis been reported to any regulatory agency?

A. No, they had not.

Q. Did you discuss reporting the results?

A. Yes. I recommended that we notify the proper agencies.

Q. Did you do so?

A. Yes.

Q. On their behalf?

A. Yes.

Q. Can you recall roughly when the notification occurred?

A. I believe it was within a couple of days.

Q. So is this still the summer of 1983?

A. Yes.

Q. What happened next as far as you were concerned?

A. They retained us to do an audit of the facility.

Q. Were you personally involved in the audit?

A. Yes.

Q. How big was your company at the time?

A. Probably fifteen staff, maybe fifteen to eighteen, somewhere in that range.

Q. Fifteen to eighteen professionals or fifteen to eighteen total?

A. Total. Most are professionals. We have a very small administrative support staff.

Q. Were you president at the time?

A. Yes.

Q. You subsequently did the audit?

A. Yes.

Q. Besides you who was involved?

A. With the audit I was the only one from our firm.

Q. I have a copy of the audit here and I'll have it marked as an exhibit in a minute, but can

you give us an overview of how you went about doing the audit, what you were interested in finding out, for example?

A. Okay. I went through their files, purchasing files, environmental files, I spoke with various personnel from Gemeinhardt, I did a very extensive walk-through in order to determine what kind of processes they were employing there.

Q. What business was Gemeinhardt in?

A. They made manufactured flutes and piccolos.

Q. Did you in the course of your audit or thereafter obtain some understanding as to the size of their business relative to other manufacturers of similar musical instruments?

A. I really didn't put it in that frame of reference.

Q. Did you put it in some other frame of reference or did you just not think about it at all?

A. No. I was looking at processes.

Q. So the files you looked at were the purchasing files and the environmental files?

A. Yes.

Q. What did the environmental files contain, what kinds of information?

A. They had results of an industrial hygiene audit by their insurance carrier, there were some letters from the state, they had invoices for disposal and some letters relative to disposal of some of their waste materials. That's all I can recall.

Q. Do you remember the subject matter of the letters from the state?

A. No, I don't.

Q. Did you see anything in the files indicating a prior concern on anyone's part with respect to the discharge of organic chemicals at the plant?

A. No.

Q. Do you recall what materials were being disposed of as reflected in the files?

A. They were disposing of -- basically it was still bottoms from a degreaser that could also be used for reclaiming solvent. Also they had some acids that they were disposing of, spent acids.

Q. Do you recall how far back in the files the history of the disposal of still bottoms went,

how far back in time?

A. No, I don't recall.

Q. Why did you review the purchasing files?

A. So I would have an idea of what types of chemicals they were purchasing and possibly using.

Q. Do you recall how far back in time the files for purchasing went?

A. No, I don't.

Q. Do you recall whether it was more than a year or two?

A. It was more than a year. I couldn't tell you how long.

Q. Couldn't say whether it was more than five years?

A. No.

Q. Did you go through the purchasing files in a systematic way in order to make a list of what was purchased, for example?

A. I went through their chemical purchases is what I asked for.

Q. Did you make a list?

A. I believe I did, yes.

Q. Did you include on the list or on some other list the amounts that were purchased?

A. I believe I did, yes.
Q. Does that list still exist?
A. My original notes may or may not, I don't recall that, but there is a list for some of the material.
Q. Including PCE?
A. Yes.
Q. And how about TCA?
A. TCA, yes.
Q. How about TCE?
A. No.
Q. There was no information on TCE purchases?
A. No.
Q. But there was on TCA and PCE?
A. (Witness nods head.)
MR. DAVIS: You have to answer out loud.
A. Yes.
Q. Do you recall whether you ever included information relating to the amounts of purchases in any of your reports, the amounts of TCA or PCE purchased?
A. Yes, there were quantities.

Q. Were there quantities listed on an annual basis?

A. In our documents?

Q. Yes.

A. Yes.

MR. DAVIS: I think we produced all those reports.

MR. LAMBERT: Yeah.

Q. I found a reference to the fact that 70,000 pounds of PCE was purchased in 1982, but I do not recall seeing amounts of either TCA purchases or of PCE purchases for other years and I wondered if you could remember which report or reports might have contained that information so I can look at them more carefully the next time.

A. It may not be in one of our bound reports. I believe there is a letter that refers to it.

MR. LAMBERT: Chris, do you know whether that was produced? I don't remember it.

MR. DAVIS: A letter?

MR. LAMBERT: Yeah.

MR. DAVIS: No. I think we basically produced reports.

MR. LAMBERT: Could we have the letter if it exists that has that information?

MR. DAVIS: Annual chemical purchases?

MR. LAMBERT: Any chemical purchases that involved the three VOC's that I mentioned.

MR. DAVIS: Okay.

Q. Have you ever provided the information with respect to purchases to anyone other than to the company itself?

A. Have I? No.

Q. Has it ever been provided to ENSR?

A. I don't believe so.

Q. Did you at any time in the course of this project attempt to quantify how much -- let me step back for a moment, lay a foundation. I know from having read your audit that you concluded that some amount of TCE, TCA and PCE was contained in the wash water that was eventually pumped into the dry wells, is that correct?

A. Yes.

Q. Did you or anyone working with you ever attempt to quantify how much TCA, TCE or PCE would have been pumped into the dry wells during any

particular period of time, per month, per year, forever, whatever?

A. No. The only time I recall quantifying something was for the tetrachloroethylene and this was after they cut into the city water supply. And I used data that we collected in a preliminary engineering phase and I determined that there was probably less than a gallon a year of tetrachloroethylene put in. Prior to the time they cut into the city water we were basically measuring what the ground water had in it except where we measured directly at a process.

Q. Let me see if I can get you to explain that a little bit. You did a calculation at the time that the plant was hooked up to the city water system?

A. After they hooked up to the city water.

Q. And what did you calculate?

A. Less than a gallon in a year.

Q. What was the methodology that you used to do the calculation?

A. Measured, I measured their composite sample of their waste water, their effluent from the metal cleaning department as a whole.

Q. From the metal cleaning department?

A. Right.

Q. And only the metal cleaning department?

A. Yeah. That included their tumbling department.

Q. Did it include any other departments?

A. Basically I think it was just those two, the wet departments.

Q. Fine. And you took samples of the effluent?

A. Yes, composited it, yes, and then analyzed it.

Q. And in doing that did you have to assume or calculate the amount of waste water that was disposed daily or annually?

A. That was part of our preliminary engineering study.

Q. Can you remember what the amount of the waste water was that you used when you did your analysis?

A. I believe it was 10,000 gallons a day. That was our design.

Q. And then did you do the calculation by looking at the concentration of PCE in that waste

water and then extrapolating out over a year?

A. Right.

Q. Did you do any investigation with respect to whether the processes that generated the waste water had changed between the time that you did your analysis and the time that the plant began operating?

A. The only information I have is from the time we came on the scene and did our preliminary engineering study. I didn't have any information what went on prior to that.

Q. So you came on the scene in mid-1983. When did you do your calculation?

A. That may have been like at least a year later.

Q. And there was no change in the processes during that time period, is that right?

A. At that point there hadn't been.

Q. Did you have any information available to you as to the amounts of waste water that had been generated on a daily basis in prior years?

A. No, only what we measured when we went in. That was the only information I had.

Q. How many gallons was that again?

A. It was approximately 10,000 gallons. I believe it may have been less than that, but that was our design, as I recall, our design flow.

Q. Were any steps taken that you were aware of between 1983 and 1985 to reduce the use of solvents at the facility?

A. To actually reduce the amount of solvent use? I don't think there was any effort made in the plant process.

Q. Have you ever seen any production figures for the number of piccolos or the number of flutes produced at the facility from year to year?

A. Not that I recall.

Q. To your knowledge, has anyone ever done any sort of investigation or calculation that tried to account for the fate of the solvents purchased by the plant? Does that question make sense to you?

A. Not to my knowledge.

Q. Just to make sure I made sense, the audit report showed that 70,000 pounds of PCE were purchased in 1982. Has anyone tried to account for that in terms of where it wound up as between the air or in still bottoms or in the waste water?

A. Not that I can recall.

Q. And to the best of your recollection, no one has ever tried to do that sort of analysis for any chemical for any year for this facility?

A. That's true.

Q. When you did your audit did you try to understand yourself where the amounts of the solvents purchased would wind up as a result of the processes for which they were used?

A. Not in a quantitative manner.

Q. How about in a qualitative manner?

A. I was looking for any possible use of TCE that we were seeing in the groundwater and that's the only thing that I really recall. I know the sources, you know, of the perk, we knew that.

Q. What do you mean?

A. After we did our preliminary engineering study, you know, evaluating the data --

Q. When you say you knew the sources of the perk, what do you mean?

A. Right. It was as a result of taking parts from the degreasers, taking them into -- putting them in the tumblers which had a soap solution and it was kind of a polishing/deburring

operation, and that was the -- and it was a very small quantity, the liquid in there, in the order of a gallon or two gallons maybe max of the soapy solution. The perk was showing up in the discharge of the tumbler at the end of the process and that was a result of drag-out, thin film of solvent on the metal that was put into the tumbler, and that was washed off with the soap. That was the primary source of perk in the effluent in the waste water discharge.

Q. Was there any other source of perk that you identified in the effluent?

A. No, nothing of -- no. This was in the hundreds of thousands of parts per billion.

Q. Parts per million?

A. Parts per billion.

Q. Per billion?

A. Yeah.

Q. Hundreds of thousand of parts per billion?

A. It was 150 or 200,000, something like that.

Q. You say in your audit that 70,000 pounds of PCE were purchased in 1982. Did you ever try to

understand how much was actually used per year or per month?

A. No.

Q. Did anyone ever give you any information as to how much was used per year, per month, per day, per hour?

A. Only on the annual basis the numbers that I had compiled for the 1,1,1 TCA and the perk.

Q. When you say numbers you had compiled, were these numbers that reflected the amount that were used per year?

A. Purchased.

Q. Did anyone tell you whether or not those were also the amounts used per year?

A. Well, I would assume they were making up that that was either evaporated to the air or that was sent off in the solids, still bottoms.

Q. Apart from evaporation to the air and perk remaining in still bottoms and perk going out in the waste water, was there any other way that perk could be lost or used?

A. It could be lost through spills, you know, either in the plant or outside at their storage area.

Q. Your audit makes reference to potential spills. If there had been a spill of PCE in the course of handling it or of using it where would the spill -- assuming the spill was not cleaned up, where would the spill have gone?

A. If it was in the plant and it reached a drain, it would go out to the dry wells. If it was spilled at their drum storage area, it would just go into the soil.

Q. Was there ever any investigation made at the drum storage area as to whether the soil was contaminated?

A. Yes.

Q. What did that investigation show?

A. That it was contaminated significantly.

Q. With what compounds?

A. Perk was the compound that was orders of magnitude greater than -- there was no TCE and orders of magnitude greater than the 1,1,1 TCA.

Q. Was that soil subsequently disposed of?

A. Yes.

Q. Which year was that? Was that 1984?

A. It was near the end of the year. It was either '83 or '84, I can't remember.

Q. Was other soil sent off site at the same time?

A. Was it sent off site?

Q. Yes, was that soil sent off site?

A. Yes.

Q. Was other soil sent off site, as well?

A. Yes, there was soil from another area.

Q. What other area was that?

A. They had two degreasers and one was their ultrasonic degreaser which they only used virgin material in there. They didn't use any reclaimed solvent, so they were using virgin perk. It sat over a pit which had a drain which discharged to a gravel hole filled with gravel outside the wall of the facility, and that was the other area where there was substantial contamination.

Q. How could material get into the drain?

A. It would have to be spills, either pumping material in or out of that degreaser.

Q. Did you inquire as to what the process was under normal circumstances for handling the degreaser that was used in that process after it had been utilized, after it was no longer virgin?

A. Only in that they pumped it into drums

and then they took those drums to their other degreaser which was also had a small still in it and that's where they reclaimed it.

Q. Was there any records kept of spills at the plant when you did your record search?

A. No, I didn't see any.

Q. Did you make any inquiry as to whether there had been any spills?

A. Not that I can directly recall other than in the area of the drum storage area, where the drum storage area was.

Q. Did you ask anyone whether there had been a spill in that area?

A. Yes, and I don't believe there was any record. It was only from the contamination that it was apparent that there had been.

Q. Did you ask anyone whether or not the way the drums were handled would produce spills?

A. No, I didn't.

Q. So you didn't try to account for the way in which the spills had occurred, you only observed the evidence of it?

A. Right.

Q. How many drums were in the drum storage

area when you looked at this area the first time?

A. Probably somewhere between five and ten.

Q. Were they full drums, empty drums?

A. I don't recall.

Q. Was it your understanding that these were drums of virgin material?

A. No, they were waste products.

Q. Were these the still bottoms?

A. Still bottoms, yes.

Q. What was the condition of the drums?

A. The drums were all in good condition.

Q. How were they sealed?

A. That I can't recall if they were open tops or if they had a bung, open top, if the lid could be taken off or if it was just a small bung that they would pump the material into it.

Q. I take it there was no pad under the drums?

A. There was a concrete pad.

Q. Where was the soil contamination found?

A. At the edge of the pad.

Q. Was the pad removed?

A. Yes.

Q. Was there any contamination found under

the pad?

A. No. The contamination was downslope, downgrade from the pad.

Q. Do you recall from your review of the purchasing records whether there was information indicating how often PCE or TCA had been purchased?

A. I'm sure there was, but I don't recall.

Q. Did you record that information?

A. I don't recall that, either.

Q. Was there a connection between any of the processes that generated waste water and the gravel seepage bed?

A. No.

Q. Was there a connection between any of the processes and the septic tank, septic system?

A. There may have been, but most of the process waste water went out to the dry wells. There was, as I recall, a question that we couldn't answer if any of the process water went to the septic system.

Q. Did the septic system subsequently get investigated?

A. Yes.

Q. Were any volatile organic chemicals found

in the septic system?

A. No.

Q. How many dry wells were there?

A. Five.

Q. Could waste water generated by the plant that contained the VOC's have gone to any of the five dry wells, were some processes linked to some or some to others?

A. They were in series.

Q. Did you see the dry wells, or as much of them as you could see, when you first went to the plant?

A. No, not when I first went to the plant.

Q. Subsequently?

A. Yes.

Q. Could you describe what one could see looking at them the first time you saw them?

A. Dry well, the sides -- it's a cylinder with -- a concrete cylinder. It was pipe basically that had holes drilled in it and it was turned on end. It sat over the subgrade beneath it which was sand. There was no pad, no bottom in it. And there was some greenish coloring in the sediment that was down in there, in the bottom of

it.

Q. Were you there when the dry wells were removed?

A. Yes.

Q. Was the top of the -- let me see if I can visualize this. They were like a concrete pipe stood on end?

A. Uh-huh.

Q. Was the top flush with the ground, close to flush with the ground?

A. No. The covers were buried. In fact, initially we thought there were four and to the best of everyone's recollection, there were four and then we discovered when we started excavating that there were five.

Q. How deep were they buried?

A. Two sections, probably the bottom was probably about 9 feet, 9 to 10 feet max below grade.

Q. Below grade. And where was the top?

A. The top was covered, you know, it was maybe six, eight inches of soil over the top of it.

Q. What was the nature of the connection between the dry well and the waste water system?

A. It was a clay pipe, as I recall.

Q. Do you recall what the nature of the soils and other geological matter was that surrounded the dry wells?

A. It was sand and gravel.

Q. And beneath the dry well was more sand?

A. Yes.

Q. Did you subsequently oversee the removal of any of the material, sand or gravel or whatever it was, beneath the dry wells?

A. Yes.

Q. How far down was the material removed?

A. We went to the water table, which was at that time about 15 or 16 feet approximately.

Q. But you didn't try to go below that?

A. No, we stopped at the water table.

Q. And was all of that soil sent off site?

A. Yes.

Q. Was any of the soil outside of the dry wells sent off site?

A. Yes.

Q. Approximately how much soil was disposed of?

A. From two areas, from the area where the

gravel was and the area in front of the storage pad, drum storage pad, between a thousand and 1,100 cubic yards.

Q. Did you include in that the soil from beneath the dry wells, too?

A. Yes.

Q. So that was soil from the dry wells, the gravel area and the drum area?

A. Right. The dry wells were located in front of the drum storage pad, so they were all in the same area.

Q. And so that area plus the gravel area?

A. Uh-huh.

Q. And that came to about a thousand?

A. A thousand to 1,100 yards.

Q. What sorts of analysis were done on what it was you were shipping off site?

A. We did VOC analysis and also we did the characteristic test.

Q. Are the results of those analyses reported in one of your reports?

A. They probably are not in a report.

Q. Where would they be found?

A. In a letter to -- information that was

submitted to the disposal facility.

MR. LAMBERT: I don't think we have that.

MR. DAVIS: I don't think so, either.

MR. LAMBERT: May we have them?

MR. DAVIS: If they can be found.

Q. Are they in your files?

A. Some of it is.

Q. Did you make any personal observations as to the condition of the soil that was being sent off site? What did it look like, what did it smell like, for example?

A. It was not -- there was nothing that you could visually see as far as contamination goes. I didn't make any other observations that I can recall.

Q. You didn't try to breathe it in?

A. Beg your pardon?

Q. You didn't try to smell it?

A. Yeah, I suppose that's pretty natural. I don't believe, though, that there was any odor at the levels that we were seeing.

Q. Was the nature of the geological deposits

beneath the dry wells and beneath the gravel bed and in the area of the -- beneath the drum pad the same?

A. Yeah.

Q. Was it all sand and gravel?

A. Right.

Q. When you went down from beneath the dry wells to the water table was that sand and gravel, as well?

A. Yes.

Q. I take it there was nothing that was built in there that was designed to somehow impede the flow of the waste water into the water table?

A. No.

Q. Were you involved in the oversight of any additional soil investigation at the Gemeinhardt facility besides whatever you did in connection with the work you have already described?

A. Yeah. We were involved with collecting a series of samples, soil samples when ENSR became involved.

Q. Where were those samples collected?

A. In the area -- we didn't take all the dry wells out initially and so it was in an area

that we had not -- well, where we actually had excavated and also areas that we had not excavated.

Q. Did you do borings in those locations?

A. We did borings and split spoon samples, I believe.

Q. Were the geologic deposits that you encountered when you did those borings also sand and gravel?

A. Yes.

Q. Do you have any information that would indicate that at least until you hit the water table that there were deposits other than sand and gravel anywhere on the Gemeinhardt facility?

A. You mean shallow?

Q. Yeah, until you hit the water table.

A. I'm trying to think. There was an area of clay, clay pinched out back in the area where the drum storage and dry wells were.

Q. How deep down was the clay?

A. Well, I don't recall now. There was a very dense sand that acted almost like an aquatard and also -- let's see. It's probably -- it could be -- where it was present there was a clay lens that may have been 15 or 20 feet, as I recall.

Q. Do you remember where that was?

A. That was on the north side of the building, which is away from the area that the drums were stored and the dry wells were located.

Q. Let me see if I can find something --

A. I think the clay pinched out someplace under the building, under their facility.

Q. I'm going to hand you Exhibit 6 from Mr. Urban's deposition from yesterday and refer you to Figure 1-2.

(Document handed to the witness.)

Q. Could you point out where you're referring to where the clay lens was discovered?

A. Okay. Out in this area, somewhere in this area right here. And then we didn't find it here, we found it there. I believe we also found some here (indicating).

Q. Could you -- let me find my pen. Could you just indicate on that where you found the clay? You can just draw circles around and just draw a line off to the side and say "clay"? Or you can do it anyway you want.

A. As I recall the way we depicted it, and obviously this is only from two bore holes, and I

believe we may have had a well log from their well house. We drew it in so it came something like this going out. But this would be a question mark, you know, because we didn't know, you know, we didn't have any borings up this way. So this was for sure here and for sure there (indicating).

Q. Now, the reporter can't take any of that down, so we have to try to get some of this on paper here. Where did you believe that the clay layer covered and where were you unsure?

A. We found it in Monitoring Well -- the bore hole from Monitoring Well 2 and we believe that it extended south at least down to the location where Monitoring Well 3 was on their property.

Q. In the manner in which you have drawn in ink on this figure?

A. Yeah.

Q. And you said that there was some area that you were uncertain of. Which was the area?

A. Okay. The southern tip or edge of the clay, we really did not know where it stopped. It may have -- it's possible that there was a straight line between Monitoring Well 2 and

Monitoring Well 3 or anything in between and it also may have extended under the building. We did not find it in the bore hole for Monitoring Well 1, so we knew it didn't go back to that area.

Q. And did you find it at Monitoring Well 3?

A. Yes, I believe we did.

Q. But you didn't find it at the gravel pit?

A. No, we didn't find it in what's referred to as the seepage bed.

Q. That's the gravel seepage bed?

A. Gravel seepage bed or where the dry wells were located.

Q. To your knowledge, has anyone at ENSR or at your firm tried to map the location of clay layers in the vicinity of the Gemeinhardt property?

A. Not to my knowledge. The U.S. Geological Survey had mapped the county and their depiction of the clay layer indicated that it probably was absent near the south side of the Gemeinhardt property. Again, they had extrapolated it also, but it basically coincided with our characterization of what happened. You know, they could be off a quarter of a mile or something like that, but they did show that it was absent.

Q. Did you or ENSR, to your knowledge, ever do any analysis with respect to whether the clay layer that you had seen some evidence of had any effect on the transport of contaminants via the groundwater?

MR. DAVIS: Objection. Calls for expert testimony. Also I'd object to asking this witness to describe what ENSR did which he may or may not be fully aware of.

MR. LAMBERT: To his knowledge.

A. Okay, could you repeat the question?

Q. Did either your firm or, to your knowledge, ENSR ever do any investigation or perform any analysis as to what impact the clay layer that you saw some evidence of might have on contaminant transport?

A. I don't have any knowledge of that.

Q. Were acids disposed of with the waste water?

A. They were disposing of bulk quantities of acid through Ashland Chemical, but through drag-out from an acid bath to a rinse there would be acid that would be carried out in the waste water.

Q. Could you explain what you mean by

drag-out?

A. When you take a part and you stick it in a solution, when you lift it out of that solution there is going to be material, either some of that solution will either be trapped in cavities in that part or held on the surface with surface tension and so if you would take that part that had these materials either deposited in or on and you put it into clean water, you could generally find trace amounts in the clean water as a result of that drag-out.

Q. Did the Gemeinhardt process have pieces of musical equipment going from an acid bath to a rinse?

A. Yes.

MR. LAMBERT: Would you mark with the next exhibit number a document called Environmental Audit, the second page of which is dated August 4, 1983?

0 (Nye Depo. Exhibit No. 3 marked for identification.)

Q. Mr. Nye, can you identify Exhibit 3 for the record?

(Document handed to the witness.)

A. This is a copy of our Environmental Audit report dated August 4, 1983.

Q. Is this the audit that you referred to earlier?

A. Yes.

Q. Is this the audit that you personally did?

A. Yes.

Q. I have just a few questions about it.

MR. LAMBERT: Anyone wants to look on, I have an extra copy.

Q. First of all, as far as you were concerned at the time, does the audit report accurately describe the processes at the facility that were capable of generating hazardous waste?

A. Yes.

Q. And did it accurately describe the processes that generated the waste water that was discharged to the dry wells?

A. Yes.

Q. And does it explain the processes and the connections by which chemicals could reach either the dry wells or the septic system or the gravel seepage bed?

A. Yes.

Q. Did you ever obtain any information with respect to the facility that caused you to believe that any of that information that I've just asked you about as contained in your audit was inaccurate? In other words, did you get it right in the audit or did you subsequently find out that you had gotten something wrong by mistake?

A. Not to my knowledge.

Q. During the course of the audit did you find out which solvents had been used at the plant?

A. Yes.

Q. Which solvents were they?

A. 1,1,1 TCA and tetrachloroethylene.

Q. And how about TCE?

A. We could not find any source, either existing or prior source of TCE.

Q. Did you inquire whether TCE was ever used at the plant?

A. Yes.

Q. What were you told?

A. I don't believe they could say for sure that -- the staff that I spoke with, that it was used.

Q. Did they know one way or the other whether it was used?

A. To the best of my recollection, they didn't.

Q. The ENSR reports that we've seen state in several places that TCA was first used around 1972. Did you learn anything that either supported that or tends to say that's not right?

A. To the best of my recollection, that's where the records started.

Q. Did the people who you spoke with when you did the audit go back in time at the plant prior to 1972?

A. That I couldn't answer. I don't know.

Q. Did you inquire when the plant first began operating?

A. Yes. I think -- and I can't remember if they gave me -- it was X numbers of years, but I recall that I thought it was in the early fifties, '51 or '52 possibly.

Q. The audit report describes the various processes that occurred at the Gemeinhardt facility. Did you actually observe those processes?

A. Yes.

Q. Did you report them accurately in your audit to the best of your ability?

A. Yes.

Q. Would you turn to section 3-10? There's no page numbers, so I don't know what page it is.

At the very bottom of the page it says, "The process waste water and any spill in the pickling/degreasing department is discharged directly to a series of four or possibly five dry wells." I wanted to ask you about the possibility of spills. You mentioned that there was a floor drain or floor drains in that area?

A. Yes.

Q. Do you remember whether there was one or more than one?

A. Well, I know there's at least one. I can't remember if there were more.

Q. Where was that in relationship to the particular component of the system that actually contained the solvent?

A. It was in the same room, as I recall.

Q. Can you be any more specific than that?

A. There's a drawing in our preliminary

engineering report that I think shows the existing floor plan.

Q. What was the size of the vessel in that room that contained the solvent that was used for degreasing?

A. It was probably five, maybe five foot by three foot, five or six foot by three foot and maybe four to five feet deep.

Q. How did the degreasing actually occur? Did you watch it? Did you see it happening?

A. Well, they usually close the -- when they put parts in it, the lid was closed.

Q. So this was like a bath, like a tank?

A. It was, yeah, they would stick it in there, and it depends, some of the parts they would suspend over the solvent and others they would dip into the solvent.

Q. Solvent heated?

A. I believe it was.

Q. And in the degreasing operation was it pure solvent or was the solvent mixed with something else?

A. I believe it was just pure solvent.

Q. Was the tank up on legs or was it sitting

right on the ground?

A. It was elevated.

Q. Where was the floor drain in relationship to the solvent bath?

A. Probably somewhere between five and ten feet away.

Q. Can you give me an estimate of the volume of the solvent bath? In other words, how big was the part that actually held the liquid?

A. Probably less than 55 gallons.

Q. Let me go back to when the TCA was first used. The records went back to around 1972 for TCA?

A. Yes.

Q. Did you inquire whether or not TCA was used earlier than 1972?

A. No.

Q. Did anyone tell you whether it had been used earlier than 1972?

A. No one knew, at least to the best of my recollection, that -- because that came up in the discussion for potential sources of TCE. The information that we had was all -- the information that we used in our audit report relative to the

use of the solvents started in 1972 and that was the extent of everyone's memory.

Q. Were you ever part of an investigation at any time to try to learn what solvents were used prior to 1972?

A. No.

Q. Do you know whether any such investigation was done by someone other than you?

A. Not to my knowledge.

Q. After you did the audit and turned in your report what was the next thing that happened as far as you were concerned?

A. Well, we did a number of things in a very short period of time trying to determine the possible extent of any contamination, whether contamination actually existed in the soil. We did a hydrogeologic investigation on the site to determine the groundwater flow direction and trying to get a handle on the extent of the groundwater contamination, and also we sampled as we were doing the borings, we took split spoon samples and analyzed them for VOC. We also began our preliminary engineering study looking towards changing their processes and the waste water to

eliminate any future discharge to the ground.

Q. Did you give Gemeinhardt some advice as to the acceptability of the system as it existed when you first came on the scene?

A. Yes.

Q. What did you tell them?

A. That they couldn't continue to discharge in that manner.

Q. Now, you mentioned a soil investigation that was done in this time period. Was that a soil investigation that you have already mentioned today or is this a different soil investigation?

A. That was part of when we did our hydrogeologic study. We put in three groundwater monitoring wells and in the course of completing the borings we took split spoon samples in the bore holes and we later installed the wells, monitoring wells in those bore holes.

Q. Was the information that was collected in connection with the bore holes and the monitoring wells reported in a report, formal report?

A. Yes.

Q. You mentioned earlier that there was some information that was contained in letters that

might not have been contained in reports, do you recall that?

A. Yes.

Q. Did you have a practice with respect to what information went into reports and what information went into letters?

A. No. We tried to make the report as complete as possible. There was no -- nothing was intentionally withheld from the report.

Q. I wasn't suggesting that. I was wondering whether or not there was some sort of information that was reported in letters and others that would be typically reported in something like a bound report?

A. Not that I can recall.

Q. Were there a number of letters that went to Gemeinhardt that contained information that had been collected in the course of investigations on site as opposed to information in reports?

A. Right. That would be primarily analytical data where we were continually checking either their water supply, their drinking water, maybe waste materials. We analyzed their solvent looking for a possible contamination with TCE. We

were trying to find the source of it to see where was a source of the TCE.

Q. Why were you focussed on TCE? Why were you as focussed as you were on TCE?

A. We wanted to make sure that we eliminated all of the sources. We couldn't explain how it got there and we still can't.

Q. When you say "how it got there," where is "there"?

A. Into the groundwater.

Q. Did you find TCE soil contamination on the property?

A. I don't believe so. If it was there, it was at very low, near detection limits.

Q. In your effort to explain or rule out TCE, whatever the right verb is there, what did you do besides talk to the people that you met with originally, the three men you met with originally and look at purchasing records?

A. I looked at every container, drum that they had in the plant personally and other than that and testing, those were the two means of eliminating that.

Q. Did you try to speak with whoever had

been responsible for purchasing back prior to 1972?

A. Not relative to the -- I took the records they gave me as being what they had. I talked to plant management people and asked them, you know, if they could tell me if they were using TCE, and they could not. Otherwise, it would have been in the report.

Q. So you asked people what they were using and you looked around to see whether there was any TCE on the premises and you looked at purchasing records?

A. Right.

Q. And you spoke with the three gentlemen that you mentioned earlier. Did you do anything besides that to find out whether TCE had been used at the plant?

A. No, that's the extent of it.

Q. Was there a time when the plant was shut down because of actions taken or threatened by one or more agencies?

A. No.

Q. Was there ever a time when, to your knowledge, when Gemeinhardt was told that it had to cease, that it was told that there was a time by

which it had to cease further discharge to the groundwater?

A. Yes.

Q. When was that?

A. That was in December of 1984.

Q. Do you recall how that message was conveyed and by whom it was conveyed?

A. It came from the USEPA and it was by letter and it indicated that they were violating the regulation pertaining to injection wells.

Q. Were you involved in responding to that letter?

A. Yes.

Q. What was the response?

A. Well, I don't recall now.

Q. In general terms, not specifics.

A. I believe we related all the activities that had taken place since the contamination in the groundwater was discovered and also we indicated that we were going to be installing a waste water treatment system that would eliminate the discharge.

Q. Do you recall that it was around November of 1984 when you submitted plans for the waste

water treatment system to IDEM?

A. Yes.

Q. When were you first asked to design the system?

A. Very early on in '83, because I believe we started our preliminary engineering report and may have even finished it in '83.

Q. Do you recall what accounted for the delay between the time that you finalized your report and the time it was submitted to IDEM?

A. The design?

Q. Yeah.

A. It was basically just taking that long to complete the engineering.

Q. On that I'm confused. What was it that you had finished in 1983 that related to the waste water treatment system?

A. There was a preliminary engineering design which was a conceptual design with cost estimates, alternatives, possible alternatives.

Q. Was that turned in to Gemeinhardt?

A. Yes.

Q. Was it Gemeinhardt then or was it CBS?

A. It was Gemeinhardt.

Q. And did you subsequently get authorization to move on to the next step?

A. Yes.

Q. Did that come shortly after you had submitted the preliminary plans?

A. Yes, very shortly, like maybe two weeks or less.

Q. Had the plans for the waste water treatment system been submitted to IDEM prior to the time that you received the E.P.A. notification?

A. Yes.

Q. When was the waste water treatment system actually operational?

A. In '85.

Q. Can you be more specific?

A. It may have been in the summer, late summer possibly. I can't really recall offhand now.

Q. Was there a period of time in January when the plant was shut down because of either an E.P.A. order not to continue to discharge or because Gemeinhardt decided they would not continue to discharge in light of E.P.A.'s letter?

A. There was no plant shutdown for that

reason.

Q. Was there a period of time when waste water was trucked off site?

A. Yes.

Q. Where was it trucked to?

A. Initially we were taking it to the Elkhart waste water treatment plant.

Q. Was it sampled in order to be shipped there?

A. Yes. They were checking every truckload.

Q. Were you doing the sampling for them?

A. No. I believe they were checking it at the plant, the treatment plant.

Q. How were they checking it?

A. I don't know. I never went down to observe what they were doing.

Q. Did you ever see any of the data that was produced as a result of checking it?

A. I don't actually recall seeing it, but I knew the results of their testing.

Q. What were the results?

A. They were finding some heavy metals in there and I believe some of the metals were in excess of their -- what they allowed in their

pretreatment ordinance.

Q. Was there ever a time that you're aware of after the first shipment of waste water to the Elkhart treatment plant when the company returned to the practice of disposing of waste water in the dry well system?

A. No.

Q. Do you know whether the waste water treatment plant was sampling for VOC's?

A. I can't say.

Q. Had you provided the treatment plant with any kind of analytical data before they agreed to accept the water?

A. Yes. We gave them the data that we had.

Q. Did that data include data with respect to VOC's?

A. I'm sure it did.

Q. Is the data that you provided to them data that was also contained in one of the reports that was provided to Gemeinhardt, do you know?

A. I don't recall what data we sent them.

Q. Do you remember the format in which it was provided to Elkhart?

A. No, I don't.

MR. LAMBERT: If there's anything in the files, Chris, that reflects the transmittal of some specific data, can we have that?

MR. DAVIS: Sure, if it exists.

Q. When did ERT first become involved in the project?

A. Sometime in 1984, but I don't recall exactly when.

Q. Were you told why ERT was brought in?

A. Yes.

Q. What were you told?

A. That CBS had retained Goodwin, Procter & Hoar as counsel for environmental and that they had -- Goodwin, Procter & Hoar had a relationship with ENSR on previous projects and they wanted to have them involved in this project.

Q. When in 1984 did this occur?

A. I don't remember.

Q. Was there any explanation provided as to how your role would relate to ENSR's role?

A. Yes.

Q. What was that?

A. We were going to be handling the fieldwork, the work at the site. They were going

to be involved with any modeling and the consulting aspects of the offsite hydrogeologic study.

Q. Since ENSR or ERT -- they're the same company -- have been involved have you played any role in the preparation of the various reports that have been submitted under ENSR's letterhead?

A. In the hydrogeologic report our geologists were at the site as the wells were being installed basically providing the field supervision and logging of the samples.

Q. Did you or your colleagues have anything to do with the actual preparation of text or the review of text of reports before they were finalized?

A. Only review. We didn't do any original text preparation.

Q. Did the procedure allow you to comment before the report was finalized?

A. Yes.

Q. Do you recall the installation of Monitoring Wells 17 and 18?

A. I don't. I know that they were installed. I don't have any special recollection about it. They were put in after, I believe, the

first series of wells.

Q. Do you have any recollection as to why they were installed?

A. Not directly, no.

Q. Indirectly?

A. I assume there was holes in the data, the geologic and hydrogeologic data, and also I believe someone became aware of problems, potential problems at Emerson Flute location.

Q. Apart from that, do you have any recollections, direct or indirect, as to why they were installed?

A. No.

MR. LAMBERT: Want to take a short break?

MR. DAVIS: Sure.

(A short break.)

Q. Before I forget, let me just ask you a couple of personal questions. Can you tell me what your training is and what your field is?

A. I have -- you mean education?

Q. Right.

A. I have a Bachelor's degree in zoology with a chemistry minor. I have a Master's degree

in environmental health engineering and I have been involved, actively involved in the environmental field since 1968. I started working with the Indiana State Board of Health, Division of Water Pollution Control, Industrial Waste Section.

Q. What's environmental health engineering? That's a new one for me. What's that mean?

A. I'm not sure why they called it that, but it covered air pollution, water pollution, industrial hygiene, so it covered those aspects but from an engineering standpoint.

Q. So but for what you picked up in working in the field, you don't really have training as a geologist or hydrogeologist?

A. No education. It's all -- I had five hours of geology twenty-five or thirty years ago.

Q. Do you have geologists and hydrogeologists on your staff?

A. Yes.

Q. Was it they who were primarily involved and not you in the various geological and hydrogeological investigations?

A. In the initial one I was -- that we did, the initial hydrogeologic study, I was involved

with that and from then on staff were involved.

Q. Has there been one particular person who has had substantial involvement, a geologist or hydrogeologist you could identify?

A. No. Everyone has been involved that we have there. Some of the staff have moved on that were involved initially.

Q. After the waste water treatment plant was installed, waste water treatment system was installed on site, what was the next involvement that you had that you can recall?

A. The offsite hydrogeologic investigation.

Q. When was that?

A. I honestly don't remember when that started.

Q. Did you have anything to do with the extension of public water supply to neighborhoods that were downgradient of Gemeinhardt?

A. Yes.

Q. What did you have to do with that?

A. We did the engineering design for the initial extension, which was at Fieldhouse and Markle.

Q. How, to the extent you know, how was the

decision made to provide water to that particular area, Fieldhouse and Markle?

A. It was an area that the E.P.A. when they came in, they didn't provide water to that area. There really was almost no contamination protection limits in that area, but it was felt that if there was a plume, contaminant plume moving in that direction, that it would be prudent to provide water source so that no one would be at risk.

Q. Was there discussion at Gemeinhardt with respect to that that you were involved in?

A. No.

Q. Where did the discussion about undertaking that work take place?

A. That was coming from CBS.

Q. Were you involved in the discussion or were you the person who implemented the decision?

A. We implemented the decision.

Q. And there was water supply to several other places, as well?

A. Yes. Fieldhouse and Markle are located west of State Road 19 and there were -- water was provided to users on the east side of State Road 19.

Q. Let me show you Figure 1-3 from Exhibit 6 to Mr. Urban's deposition.

(Document handed to the witness.)

Q. This purports to show water supply -- I can't read the caption, but I think it's --

A. Alternative Water Supply Project Summary.

Q. Good, thank you. Does it accurately reflect where public water was supplied as a result of the various Gemeinhardt proceedings?

A. Yes.

Q. Some of the areas marked in heavy black line, what does that represent?

A. Those are the streets that water was provided. That was where the new mains were installed.

Q. The system for Markle Avenue and Fieldhouse was not installed until 1987, is that correct? That's what's indicated there?

A. Apparently, yes.

Q. Was there anything that you recall in particular that precipitated the decision to install public water supply mains in that area?

A. Only from the potential that the plume could reach that area.

Q. Was there anything that happened in 1987 that caused that potential to rise to a level of interest that decision was made to install wells in that area?

MR. DAVIS: If you know.

Q. Install water main in that area.

A. Nothing, to my knowledge.

Q. When was the first time that you were aware that the rail yard was either a Superfund site or being proposed as a Superfund site?

A. I don't recall. It was in the newspaper.

Q. Back in the eighties sometime?

A. Yes.

Q. Can you place that in relationship to where you were with the Gemeinhardt project? Can you place it in relationship to any of the reports or any of the steps of the process?

A. No. To my knowledge, I didn't really relate it.

Q. Have you or your firm engaged in any efforts over the past years since this project began to try to identify other potential sources of contamination in the vicinity of the Gemeinhardt plant other than Gemeinhardt?

A. In the last year?

Q. No, in the last several years since the project began.

A. Yeah, we did initially.

Q. When was that?

A. Probably in 19 -- maybe early 1984.

Q. Time frame?

A. Yeah.

Q. Anything subsequent to that?

A. I think the first couple of years that we were involved with the project we tried to accumulate as much of that information as we could.

Q. But nothing since then that you can recall?

A. Nothing that I recall.

Q. Has anyone other than your firm done anything like that, to your knowledge, since then?

A. Not to my knowledge.

Q. Did the investigation that you did back in the early years lead you to the conclusion that there were other identifiable sources of volatile organization chemical contamination than the Gemeinhardt facility?

A. Yes.

Q. Which sources did you identify?

A. Well, one was Emerson Flute. That was basically hearsay from one of the Gemeinhardt management people who had been told by a friend of his at Emerson that they were dumping their -- some of their solvent out behind the plant. We found drums, several hundred drums in a direction that would be upgradient from the Gemeinhardt property and we had reported that to the state and I'd asked them if they would go investigate it.

Q. Did you ever get a report back from the state?

A. No. We suspected other sources just by the nature of their business. One was a junkyard that was east of Gemeinhardt and when the county got involved, the county health department got involved and they were going door-to-door, in a very short period of time, less than a week, this junkyard disappeared.

Q. Where was it located?

A. It was east, probably a quarter of a mile east of Gemeinhardt.

Q. Can you give me a street identification?

A. Yeah. It was on Mishawaka Road, County

Road 20 East.

Q. Was there a cross street?

A. No, it wasn't on a cross street.

Q. If it shows up on any of the maps.

A. There also was another junkyard that disappeared and it was downgradient, even downgradient from Emerson Flute, and it was just totally cleaned off. And then there was another source that we did identify when I was with the county. We went out, it was a body shop that was due north of -- it was right adjacent to Gemeinhardt's property and it had been closed. And we walked in to the shop area, there were cans of thinner that had been laid adjacent to a trench drain and apparently were allowed to drain into this trench drain, and so we collected a sample from the septic tank that was at that site. That shortly disappeared.

Q. That's not the sample?

A. No, but the site.

Q. The site disappeared?

A. You'd never know there was any building on there.

Q. Is that right?

A. There were two buildings. There was a house and a body shop.

Q. What did the sample show?

A. It was contaminated with xylene toluene, aromatics from paint thinners.

Q. I've got Figure 2-1 from Exhibit 6 from Mr. Urban's deposition that shows a one mile radius of Gemeinhardt. Were the junkyards that you referred to within a one mile radius? Would they show up on this map?

A. Yes.

Q. Would you take my pen and show me where the junkyards were? Just put boxes and then you can just run a line out to the margin and put "junkyard." This is Exhibit 6 to Mr. Urban's deposition. Why don't you use the blue pen so it will show up a little bit better against the background?

A. It was in this area here. And Harry's was up, and I can't -- I can't be quite as exact. It was up in this area (indicating).

Q. Well, you can draw a larger box if you want or a circle just to get a general sense of the area and just put a line out to the side and say

"junkyard."

A. (Indicating.).

MR. DAVIS: Do you want him to shade it with crosshatches or something so it will reproduce?

MR. LAMBERT: Yeah, that's fine. It's still going to be hard to see.

A. (Indicating.)

MR. LAMBERT: The witness has crosshatched a couple of small rectangles and has written "junkyard" on the top and on the side of Figure 2-1.

MR. DAVIS: Did you want the drums or anything else he mentioned?

MR. LAMBERT: Well, I was going to ask next for the body shop and then we'll do the drums.

A. Body shop was right here (indicating).

MR. LAMBERT: The witness has drawn a circle for body shop and written "body shop" in the right side of the circle.

A. Want the drums?

Q. Yes, please.

A. (Indicating.)

MR. LAMBERT: The witness has designated the drum area, as well.

(Phone call.)

MR. DAVIS: Want Emerson while you're at it?

A. Did you want Emerson, too?

Q. Sure, why don't you put Emerson in, as well?

A. (Indicating.)

Q. You mentioned you'd been involved in environmental work for how long?

A. Since 1968.

Q. Have you done any other work in Elkhart besides Gemeinhardt?

A. Yes.

Q. Can you say from your own experience whether or not the practice of disposing of waste water and waste material in dry wells and septic systems is a common practice in that area?

A. It has been, yes.

Q. When did it cease to be a common practice, if you know?

A. I would guess that it's still a common practice. If you'd like me to explain, I could

tell you why.

Q. Sure.

A. Because of the rapid, the tremendous growth in the RV and mobile home industry in that area, a good part of that took place outside the city limits, which meant that there were no sewers involved and so you can travel all through Elkhart County, county roads, and find these manufacturing facilities. And a good number of them by the very nature of the business would be using various types of chlorinated and unchlorinated solvents.

Q. Have you done work in the area that's north of Gemeinhardt between Gemeinhardt and the Conrail rail lines for other clients?

A. Yes.

Q. Can you tell me for whom?

A. I can't. I don't recall the client, but we did some work, I believe it was an old roundhouse.

Q. What was done or made at the roundhouse?

A. They turn the engines around there.

Q. Railroad train engines?

A. Yeah.

Q. Apart from that, have you done anything

up there?

MR. DAVIS: He personally or his company?

MR. LAMBERT: Personally.

A. I didn't do that personally.

Q. Okay. Have you ever actually observed any facilities in the -- say within the circle that's drawn on Figure 2-1 that were actually disposing of chlorinated solvents down in dry wells or septic systems?

MR. MASON: I'm going to object on the basis of it's outside the scope of 30(b)(6), just for the record.

Q. You can answer.

A. I haven't observed it.

Q. Apart from what you have identified already and noted on Figure 2-1, did you identify any other potential sources of contamination in the vicinity of the Gemeinhardt facility?

A. I can't recall any others right now.

Q. Did you or your company or anyone associated with the project take any samples from any of those facilities other than the samples that were taken from the body shop?

A. I believe the E.P.A. took water samples, water supply. They may have -- I don't know if they took any waste water samples. We also did some sampling of homes and that, but -- homes and businesses that could be potentially affected and we were looking at water supply, not waste water.

Q. Did you do any soil sampling in any offsite areas other than spots where you installed monitoring wells?

A. No, we didn't, no.

Q. Did you ever attempt to compile any listing of residential wells in the vicinity?

A. Yes.

Q. In connection with that did you attempt to ascertain the depths of the wells?

A. Yes.

Q. Did you go about that in some systematic way, review records or whatever?

A. We obtained water well logs that were available from the Indiana Department of Natural Resources, the water supply section, and we were using those logs to get a general idea of the geology in the area.

Q. Are those logs collected in any of your

reports?

A. There may be some of them in the hydrogeologic report. I can't recall.

Q. Do you recall where the depths of the wells and the locations of the wells was recorded?

A. Where they had logs, generally they had the screened interval reported.

Q. Do you recall whether your firm ever prepared a listing that had the identity and location and depth of residential or other private wells in the vicinity?

A. I can't recall.

Q. Do you recall whether samples taken from private wells were ever used as part of an effort to map the location of plume?

A. Not to my knowledge.

Q. Did your firm ever submit any reports or other information to either E.P.A. or IDEM?

A. Yes.

Q. With your own transmittal letter?

A. I believe some of them we actually drafted the letter and signed it, others we prepared a draft for Gemeinhardt to put it on their letterhead and submit it.

Q. And as to the reports that you prepared that were submitted either directly by you or were submitted by Gemeinhardt that contained technical information of whatever sort, did you satisfy yourself as much as you felt necessary that the technical information provided in the reports was as accurate as it could be?

A. Yes.

Q. When your firm took samples and handled samples and had samples analyzed did you follow the standard E.P.A. protocols with respect to those steps?

A. Yes.

Q. Is there any data, can you think of any data in any of your reports now that you believe was inaccurate when submitted to E.P.A. or IDEM?

A. No.

Q. When you submitted reports directly to E.P.A. or IDEM on your own, with your own letter, was it your practice to show the reports first to Gemeinhardt?

A. Yes.

Q. So that they'd have a chance to review them?

A. Yes.

Q. And in each instance when you submitted a report to E.P.A. or IDEM had the report been previously approved by your client?

A. They had reviewed it. They didn't approve or disapprove of them. They were relying on us for the contents of the report.

Q. Had you advised them that you intended to provide it to E.P.A. or IDEM on their behalf?

A. Yes. They wanted to be right up front with the state and we were working continually with the state until the E.P.A. got involved.

Q. What did you understand was the purpose of submitting reports to IDEM and the E.P.A.?

A. To keep them informed and get input from them, let them know what direction we were headed in to try and define the problem and eliminate it.

Q. Did you get feedback on your reports from E.P.A. and IDEM from time to time?

A. No, not that I can recall.

Q. This is Exhibit 6 again from Mr. Urban's deposition. There's a short site history on page 1-5 that addresses in part the use of degreasers at the plant. Do you have any information as to how

the dates for the starting points for the use of the various solvents were determined for that report or for other ENSR reports?

A. Well, the 1,1,1 trichloroethane usage period was -- appears to be that it's from our initial audit, and that was information that we had obtained from the Gemeinhardt people and the records. Also the tetrachloroethylene, actually, I think they started using it in 1979. I have no idea where the trichloroethene being used prior to 1972, I have no idea where that came from.

Q. And this also says in the first sentence that it's been an active facility that's manufactured flutes and piccolos since the 1940's. You had mentioned the 1950's before. Do you know what the source of information was that --

A. I don't know where the forties came from. I believe they told me when we first started that it had been in operation for over thirty years, so that was how I kind of came up with the figure.

Q. Worked your way back to the fifties?

A. Right.

Q. Has your firm done any groundwater

modeling in connection with this site?

A. Not with this site, no.

MR. LAMBERT: I have no further questions. Thank you.

MR. CUNNINGHAM: I have nothing.

MR. MASON: I've got a few, twenty minutes at most.

0 CROSS EXAMINATION

BY MR. MASON:

Q. Mr. Nye, I'm Steve Mason. I'm here on behalf of the United States and I just want to ask you a few questions.

Do you know what wells were used either by EIS or in connection with ENSR to identify the downgradient edge of the Gemeinhardt plume?

A. Well, I believe they used -- they did their modeling based on all of the wells that were installed, the nest. I couldn't tell you if they used part or all, but I'd assume that they took all the data they had and used that to come up with their plume.

Q. I think you stated earlier that the residential wells on Fieldhouse and Markle were

clean?

A. Yeah. There were only a couple that showed very low levels and they were way below MCL's.

Q. Were there monitoring wells installed in that area, as well?

A. Yeah, we have -- there's one nest in that area.

Q. Do you know which nest, do you recall which nest that is?

A. Not right offhand.

Q. Do you know if that nest ever showed any contamination?

A. I don't know lately. I know it was clean, I think initially it was clean. I'm not sure what the status now is.

Q. Did your firm have any input in conclusions that were drawn by ENSR in their reports?

A. Not really. We reviewed it, but we didn't comment on their conclusions.

Q. Do you know when the groundwater system started to operate, the groundwater treatment system? Do you know whether -- was your firm

involved in the design of the system?

A. Right. My recent memory is not quite as good. Let me think. It's been within the last year.

Q. Do you know whether the zone of capture of any extraction wells would reach as far as Fieldhouse and Markle?

A. We have a recovery well right up in that area, so it would definitely -- I mean, we didn't do the modeling, but that's why the well is there, to capture the leading edge of any plume that might show up.

Q. Do you have any recollection as to how far downgradient the zone of capture is for that?

A. No.

Q. Do you know how long the facility reclaimed solvents onsite?

A. No, I can't say. It's long as they had the Phillips degreaser, which was the degreaser that had a still in it, but I couldn't tell you when that started.

Q. Do you know if any work was done to determine what percentage of solvents used at the plant made it to the reclaimer?

A. No.

(Phone call.)

Q. Where did the spent solvents that went to the reclaimer originate?

A. That was the still bottoms that they removed from the Phillips degreaser that had the recovery still at one end of it. So that was the residual, the crap that came out, the solvent.

Q. I think you have stated that you don't have any knowledge as to the use of TCE at the facility, is that correct?

A. That's correct.

Q. If TCE were to be used at Gemeinhardt, what process would it have been used in?

MR. DAVIS: Objection. Calls for speculation. You may answer.

A. It would have been used in one of their stills would be the most likely.

Q. So would the TCE essentially be used in the same manner as PCE?

A. Yes.

Q. Do you know whether any work was done either by your firm or ENSR to estimate the mass of contaminants in the groundwater at the site?

A. We didn't. I couldn't answer if ENSR did or not.

Q. I believe you stated that your firm had done some modeling in the area at other sites, is that correct?

A. No, not that part of Elkhart, no.

Q. Did your firm have any input into the modeling that was done by ENSR as far as any technical judgments as to the equation?

A. No.

MR. MASON: I don't have anything else, counsel.

MR. CUNNINGHAM: I've just got one question, if that's all right with you.

0 CROSS EXAMINATION

BY MR. CUNNINGHAM:

Q. With regard to carbon tetrachloride, I think Mr. Lambert asked this, but just in case he didn't, you can neither confirm nor deny the use of carbon tet, is that right?

MR. DAVIS: Objection.

Q. By the Gemeinhardt plant?

MR. DAVIS: Objection. Mischaracterizes his prior testimony, but you may

answer.

Q. Feel free to -- I don't want to do that, that's for sure.

A. I can neither confirm nor deny that they used it?

Q. Yes.

A. There was absolutely no record that they ever used it and I would seriously doubt that they would have.

Q. Is there any kind of basis for that?

A. Yeah, because of the problems with fumes, you know. It's extremely toxic and that's one of the reasons why TCE fell out of favor because people were being killed working around degreasers and the carbon tet would have been much worse than that. So I wouldn't -- that was common knowledge back in the early fifties, you know, the health hazards to carbon tets.

Q. Between 1940 and 1950 can you give any testimony with regard to your knowledge of the use of carbon tet during that period?

A. No, I couldn't.

MR. CUNNINGHAM: That's all I have. Thank you.

MR. LAMBERT: Chris, I just had a chance to skim through the two letter reports that you gave us this morning. Could I just ask the witness a couple of questions about them so I could try to understand what the numbers mean?

MR. DAVIS: Sure, to the extent that he was involved with them.

MR. LAMBERT: Apparently he was there. I hadn't even realized it until I just looked at it, but apparently he observed some of the stuff. He's shown as present at a couple of these things.

MR. DAVIS: Go ahead.

0 REDIRECT EXAMINATION

BY MR. LAMBERT:

Q. Here's Exhibit No. 1, Mr. Nye. This is a progress report that was submitted to E.P.A. in December of 1992 by ENSR.

MR. DAVIS: Which date is that one, Paul?

MR. LAMBERT: This is -- the cover page is November 3, 1992. It attaches an October 30, 1992 letter. And Attachment 1 to the October 30, 1992 letter is some data on the groundwater

recovery and treatment system and it refers to a performance test that was conducted on September 23 and 24 at which Mr. Nye is reported as present.

Q. Do you remember that, Mr. Nye?

A. Yes.

Q. I don't want to go into it in any detail at all. I just want to be able to understand what samples were taken that generated the data that's described on Attachment 1 and also to ask you a question about a note that appears here.

There is data for tetrachloroethylene, 1,1,1 trichloroethane and trichlor -- what's that, trichloroethene, and there's a column on the left-hand side that says what the data relates to and there's one that's for RW-1 discharge. Am I right in understanding that what was being sampled when you were present and which is reflected on this sheet were concentrations in the water that had been pumped out of the ground by the recovery well?

A. Correct.

Q. So that whatever was captured would have been captured from whatever the depression was. It was not necessarily contaminants that happened to

be passing by the well on the day that the sample was taken?

A. Correct.

Q. And then at the bottom there's a note that says that "The presence of TCA and TCE indicates that there are other nearby sources of these compounds that are not in the 'Gemeinhardt plume.'" Was anything done subsequent to this time to try to identify what the other sources were that are referred to here?

A. No.

Q. Did you have anything to do with the preparation of that note that the data that was collected came from other sources?

A. No.

Q. Then on Table 1 there's something called Groundwater Recovery and Treatment System Performance Test Results. Does this reflect data from the effluent of the treatment system after the treatment had occurred?

A. Yes.

Q. Is it your company that's responsible for collecting samples that would be analyzed and the results provided to E.P.A. in connection with the

operation of the treatment system?

A. For the most part we're doing it, yeah.

Q. My understanding from yesterday, if I can remember what my understanding is, that the samples were being collected and analyzed quarterly, is that right?

MR. DAVIS: I think that's what the monitoring plant provides and reported annually.

MR. LAMBERT: Yeah, I think that's right.

MR. DAVIS: I think that was Urban's testimony.

Q. What's the schedule that you're on? In other words, when does the plan call for samples to be collected?

A. That I can't recall offhand.

Q. I had just a question or two about Nye Exhibit No. 2 which is a February 8, 1993 letter to E.P.A. from David Urban and it contains an Attachment A which is called Summary of Analytical Results. And I wondered, Mr. Nye, whether or not it was your firm that collected the data that is depicted on Attachment A.

A. Yeah, we did the sampling. We may not

-- our lab may not have done the analysis on this one. I'm not sure. There was, I think, one or the groups of samples that went out to another lab.

Q. Could you help me understand the format here? There's a column called RW-1, another one for RW-2.

A. Recovery Well 1.

Q. And then after you go across after RW-3 there's a reference to influent and effluent?

A. That would be influent to the treatment system and effluent from the treatment system.

Q. And where was the sample taken that appears in the RW-1 column? In other words, I know it was taken at RW-1. Was it taken while RW-1 was pumping?

A. Yes.

Q. Is this the effluent from RW-1?

A. Right.

Q. And that would be true for RW-2 and RW-3?

A. Yeah.

MR. DAVIS: Do you have more questions?

MR. LAMBERT: Yeah, one more question.

MR. DAVIS: I didn't know if you were done.

Q. Have any samples been taken from RW-1, RW-2 and RW-3 while the wells were not pumping?

A. Not to my knowledge, no.

MR. LAMBERT: Thank you.

MR. DAVIS: Take a short break? I may have a question or two.

(A short break.)

0 CROSS EXAMINATION

BY MR. DAVIS:

Q. I had just a few questions, Mr. Nye.

Do you recall when Mr. Lambert asked you about any information you had on other potential sources of contamination downgradient of Gemeinhardt?

A. Yes.

Q. And upgradient of the rail yard?

A. Yes.

Q. Do you have any observations that you made or any information that would lead you to a belief as to whether there are other potential VOC sources in the vicinity of RW-1?

A. Yeah, there are two different areas that

has been discussed among our staff. One is the location, the former location of the second junkyard, and it is upgradient from our monitoring well nest and the Recovery Well 1 that's across the street from it. Also on the property immediately adjacent to RW-1 there is a facility where they repair trucks and appear to do a lot of maintenance on fairly large trucks.

Q. Going to the former junkyard, can you estimate what distance upgradient -- I take it that's south of RW-1 that was formerly located?

A. Yeah. That would be less than a quarter of a mile.

Q. How about the truck garage you mentioned, about how far would you estimate that is from RW-1?

A. Less than 100 feet.

Q. Have you observed any other land uses in the area downgradient of Gemeinhardt other than what you have mentioned in your discussion of other potential sources that you might consider to be other potential sources that might at least merit investigation?

A. None that I have seen, but I know staff has mentioned there's another -- one of the

engineers was mentioning that somewhere around the location of the junkyard there was another facility that they felt could be a potential source, but this is just -- this is just in discussions that we've had internally.

Q. Do you recall any more specifics about why that was discussed as a potential source?

A. Yeah, actually, I do recall. It was because when we started finding chlorinateds in the monitoring well nest across from RW-1, across the street from RW-1, I think that's when that discussion came up.

Q. What was the potential source or business operation that was discussed that you were referring to?

A. The three that I've mentioned, that's what the staff had brought up, particularly the one that was less than 100 feet from -- this was a relatively new operation when we first put the wells in, it was just a small garage and the owner has expanded it, and so that was brought up that that -- we haven't inspected it or done anything, but that would be a likely source, potential source for chlorinateds because they're working on heavy

equipment.

Q. By chlorinateds what are you referring to?

A. Degreasing solvents.

Q. Would that include these so-called chlorinated VOC's that you have been talking about?

A. Yes, it could be TCA or perk.

Q. Perk meaning tetrachloroethylene?

A. Tetrachloroethylene.

Q. I just want to make sure I understand. You mentioned three potential sources including the junkyard, the truck garage. What was the third?

A. And the other one, I don't know the name of it. I just remember in the discussion that they named three places that they felt were potential sources.

Q. Do you have any recollection about the nature of the third one?

A. No.

MR. DAVIS: No further questions.

0 CONTINUED REDIRECT EXAMINATION

BY MR. LAMBERT:

Q. Well let me just try and get this on the map, if I may. You were marking locations of

junkyards on Figure 2-1 of your began Exhibit 6 and since we're now talking about RW-1, why don't we move to Urban Exhibit 4 which has a Figure 2-2 that shows RW-1? It will give you a little more room to write. Could you draw in on that figure the location of the truck repair shop that you were just describing in response to Mr. Davis' questions?

A. It's right here (indicating).

Q. Does it abut the street?

A. No, it's set back.

Q. Okay. Why don't you draw a line out to the margin, put "truck repair facility" or "truck facility"?

A. (Indicating.)

Q. And would you also show where the junkyard was that you're just referring to?

A. (Indicating.)

Q. And then Mr. Davis asked you whether there was a third facility that merited investigation as to whether it might be a potential source of contamination.

A. It's somewhere in this area (indicating), but I can't -- that's all I -- it was all

verbal. I wasn't looking at a map, but I was listening to what they were telling me.

Q. So there were three sources that merited investigation?

A. Yeah, that they felt were --

Q. This is your staff?

A. Staff, yeah.

Q. What investigation, if any, is planned for these sources that we're talking about?

A. Really hasn't been discussed at all beyond all of us.

Q. You were asked about the possible use of chlorinated solvents at the truck repair facility by Mr. Davis?

A. Yes.

Q. Do you know whether or not chlorinated solvents are used at the truck repair facility?

A. No.

Q. Only that they might be?

A. Right.

Q. And you don't know anything about what actually might have been released at the junkyard?

A. No.

Q. And you mentioned that data from a well

adjacent to or across the street from RW-1 was what put you on to this possibility of other sources, is that right?

A. Yes.

Q. What well is that, do you recall?

A. No, I don't recall.

Q. Let me see if I can find a map that would show us that. Is that 17?

A. No, I don't think -- I believe 17 was downgradient from Emerson.

Q. Well, this is -- I'll have to extrapolate a little bit, but this is Figure 3-5 from Urban 6 and it shows the area where RW-1 is located, though it doesn't show RW-1 in particular. But it does identify monitoring wells. Using that can you tell us what monitoring well you're referring to?

A. You're right, it is 17, yeah.

Q. And when did chlorinated solvents start showing up in Monitoring Well 17?

A. It's been just recently. I don't recall.

MR. LAMBERT: Nothing further.

MR. CUNNINGHAM: Nothing further.

MR. MASON: I've got a couple

follow-up questions on the same line of questioning here.

0 RECROSS EXAMINATION

BY MR. MASON:

Q. What levels were found at that monitoring well, do you recall?

A. I don't recall, no.

Q. Were they high, significant?

A. No, I don't recall.

Q. Do you recall what depth they were found? Shallow?

A. I'm not sure which of the wells or if it was in both of them. I think there's two wells there in that nest. I'm not sure.

Q. Did the contamination show up prior to the initiation of the groundwater extraction?

A. That I couldn't tell you also. It's a good question.

MR. MASON: Nothing further.

MR. LAMBERT: Done.

(Whereupon, the deposition in the above-entitled matter was concluded at 12:42 p.m.)

C E R T I F I C A T E

I, H. STEPHEN NYE, do hereby certify that I have read the foregoing transcript of my testimony given on September 28, 1993, and I further certify that said transcript is a true and accurate record of said testimony (with the exception of the following corrections listed below):

Page	Line	Correction

Dated at _____, this _____ day of _____, 1993.

_____
DEPONENT

Read and signed before me this _____ day of _____, 1993.

_____
Notary Public
My commission expires:
_____

COMMONWEALTH OF MASSACHUSETTS

COUNTY OF SUFFOLK

I, HEIDI B. STUTZ, Shorthand Reporter and Notary Public duly commissioned and qualified in and for the Commonwealth of Massachusetts, do hereby certify that there came before me on the 28th day of September, 1993, at 10:05 o'clock a.m., the person hereinbefore named, who was by me duly sworn to testify to the truth and nothing but the truth of his knowledge touching and concerning the matters in controversy in this case; that he was thereupon examined upon his oath, and his examination reduced to typewriting under my direction; and that the deposition is a true record of the testimony given by the witness to the best of my ability.

I further certify that I am neither attorney nor counsel for, nor related to or employed by any of the parties to the action in which this deposition is taken; and further that I am not a relative or employee of any attorney or counsel employed by the parties hereto or financially interested in the action.

IN WITNESS WHEREOF, I have hereunto set my hand this 8th day of October, 1993.

HEIDI B. STUTZ, Notary Public
My commission expires:
September 30, 1994

EXHIBIT

Nye #1
9/28/93 HBS

ENSR

ENSR Consulting
and Engineering
35 Nagog Park
Acton, Massachusetts 01720
(508) 635-9500
(508) 635-9180 (FAX)

ENSR Document No.: 3140-013-500
ENSR Reference No.: 220-DBU-285

November 3, 1992

Director, Waste Management Division
U.S. Environmental Protection Agency
Region V
230 South Dearborn Street
Chicago, Illinois 60604

RE: Gemeinhardt, Administrative Order Docket No. V-W-85-C-003
Monthly Progress Report

Director:

In accordance with the referenced Order, I have enclosed the progress report for the period October 1, 1992 through October 31, 1992.

Should you have any questions please call.

Sincerely yours,

David B. Urban, P.E.
Senior Project Manager

DBU/mm

Enclosure

cc:
Christopher P. Davis, Esquire - GPH
Joseph Horowitz, P.E. - CBS
Daniel W. Akin, P.E. - EIS
John Tielsch, Esquire - EPA
Kenneth Theisen - EPA
Catherine Daugherty, Esq. - IDEM
Reggie Baker - IDEM
Robert Clemens - ENSR

ENSR

PROGRESS REPORT

GEMEINHARDT ADMINISTRATIVE ORDER

DOCKET NO. V-W-85-C-003

SITE LOCATION: ELKHART, INDIANA

OCTOBER 1 THROUGH OCTOBER 31, 1992

1. Progress this Period:

   Groundwater recovery and treatment system is operational.

   Analytical data from a round of monitoring well samples have been received. Results are currently being validated.

   Results of the performance test in September showed adequate removal of contaminants. Request for approval for sustained operation was submitted to EPA (copy attached). The request included a summary of the performance test and a proposed monitoring plan for the first month of operation. Currently awaiting approval from EPA.

   Awaiting approval of FCC license for operation of the telemetry system.

2. Deliverables Submitted

   Issued performance test summary and proposed monitoring plan for the first month of operation. These documents (copy attached) were included in the request for approval for sustained operation. A long-term monitoring plan and summary report will be issued in the near future.

3. Critical Issues:

   Awaiting FCC license approval. System cannot be operated without this license.

4. Activities Planned:

   Upon EPA approval and receipt of the FCC license, startup and sustained operation will begin.

   Using water level data, the capture zone of each of the recovery well pumps will be evaluated. Flows will be adjusted as necessary.

   The system monitoring plan and data collection format will be formalized.

   A summary report will be prepared.

ENSR

5. Schedule Changes:

Completion of project is on schedule, as provided in the March 1992 Progress Report.

6. Personnel Changes:

none.

ENSR

ATTACHMENT

REQUEST FOR APPROVAL FOR SUSTAINED OPERATION

OCTOBER 30, 1992

ENSR

ENSR Consulting
and Engineering
35 Nagog Park
Acton, Massachusetts 01720
(508) 635-9500
(508) 635-9180 (FAX)

October 30, 1992

ENSR Ref. No: 3140-013-420
ENSR Doc. No: 220-JM-250

Mr. Kenneth Theisen
US E.P.A. - Region V
230 S. Dearborn Street
Chicago, IL 60604

RE: Request for Approval for Sustained Operation of
Groundwater Treatment and Recovery System
Gemeinhardt Site: EPA Administrative Order Docket No. V-W-85-C-003
CBS Project No. C-88-791

Dear Mr. Theisen:

The groundwater treatment system at the Gemeinhardt site in Elkhart, Indiana has been successfully constructed and tested. ENSR, on behalf of CBS Inc., is requesting permission to begin sustained operation of the completed groundwater treatment system. This letter provides a brief description of the start-up and performance test (Attachment 1) and an abbreviated proposed Monitoring Plan (Attachment 2) to address immediate monitoring needs. A more detailed Start-up Report and a comprehensive Monitoring Plan will be provided at a later date.

In order to proceed with system operation, we request your approval as soon as possible. For your information, we have not yet received the FCC license required to operate the telemetry system for the recovery wells. However, we want to be ready to start the unit as soon as the license is received.

If you have any questions or comments, please do not hesitate to call me at 508-635-9500.

Yours truly,

David B. Urban, P.E.
Senior Project Manager

cc: Joseph Horowitz, P.E. - CBS
Daniel Akin, P.E. - E.I.S.
Christopher Davis, Esq. - Goodwin, Procter and Hoar
Michael Moore - ENSR
David Lehman - R.E. Wright Associates, Inc.

Attachments:
Start-up and Performance Test Summary
Proposed Monitoring Plan for Startup period

ENSR

ATTACHMENT 1

Gemeinhardt Site
Groundwater Recovery and Treatment System
Start-up and Performance Test Summary

A two day performance test of the Gemeinhardt groundwater recovery and treatment system was conducted on September 23 and 24, 1992. The following personnel were on-site for all or part of the test:

ENSR -	Jeffrey Munic
E.I.S. -	Steve Nye, Wanada Baxter-Potter, Dan Akin, Jeff McKean
R.E. Wright Assoc. -	Barry Schirk, Steve Singizer
Peerless Midwest -	Mike Wiggins

On Day 1 of the test, mechanical and electrical checkouts were performed for most of the day. City water that was in the pipeline for hydrotesting was displaced by water pumped from the recovery wells. The treatment system was then operated at the design flow rate of 160 GPM with individual flows of 50, 60, and 50 gpm from recovery wells RW-1, RW-2, and RW-3, respectively. The following preliminary laboratory results were obtained:

	Tetrachloroethene*	1,1,1-Trichloroethane*	Trichloroethene*
RW-1 Discharge	ND	960	84
RW-2 Discharge	ND	200	89
RW-3 Discharge	990	260	6.6
Stripper Feed**	265	430	50
Stripper Effluent	ND	ND	ND

* Concentrations are reported in ug/l.
** Represents the blended flows from all three wells

Note: The presence of 1,1,1-TCA and TCE in RW-1 indicates that there are other nearby sources of these compounds that are not in the "Gemeinhardt" plume. September, 1992 monitoring well data from MW-17 just upgradient of RW-1 indicate no TCE and only a trace of 1,1,1-TCA. It can be concluded that the recovery well is drawing contamination from another source.

Based on the preliminary results, we were confident that the stripper was performing as designed. Therefore, on Day 2, a range of flow rates and sampling times were tested under the highest available concentrations. Pumping from only RW-3 provided the "worst case"

concentration level because PCE is the least strippable of the detected VOCs and it has a relatively low treatment standard of 5 ug/l. Prior to sampling, RW-3 was pumped at 50 GPM for 80 minutes to displace the pipeline volume (containing mixture of water from all three recovery wells) so as to ensure that the highest concentration water was being fed to the stripper.

Groundwater flows to the air stripper were tested in the following order: 200 GPM, 165 GPM, and 77 GPM. Samples were taken at one, three, and five minute intervals. For each flow rate, one equalization tank full of water was processed prior to sampling. At each sampling time, duplicate samples were taken at two locations for 2 different laboratories. Samples were taken at 3 flow rates, 3 time intervals, at 2 locations, for 2 labs with duplicate (2) samples. Thus, not counting QA/QC samples, 72 vials were taken.

Sampling Nomenclature

Location - F = feed, E = effluent
Flow - 200, 160, 77 GPM
Time - A,B,C corresponding to 1, 3, and 5 minute following stripper start-up

Example: a sample designated "F-200-A" represents a feed sample taken with a 200 GPM flow rate at time = 1 minute.

The laboratory results for the VOC analyses by EPA Method 624 are shown on the attached table. In summary, non-detect results were obtained for the stripper effluent for a range of flow conditions and sampling times for worst-case concentrations. The performance of the stripper met the discharge requirements: The concentration of volatile organic compounds in the effluent were below the specified limits of 5, 200, and 5 ug/L for PCE, 1,1,1-TCA, and TCE, respectively. Although the design VOC concentrations (3.2, 5.7, 0.6 mg/l of PCE, TCE, and 1,1,1-TCA, respectively) could not be tested because actual recovery well concentrations were below the design levels, results indicate that the stripper performance will be adequate at design conditions. Air emissions from the stripper, based on actual water concentrations, were 0.060 lb/hr. which is well below the 0.76 lb/hr. or 18 lb./day maximum design emission rate.

ENSR

Table 1
Gemeinhardt Site
Groundwater Recovery and Treatment System
Performance Test Results

Sample	PCE	1,1,1-TCA	TCE
F-77-A	1000	230	8
F-77-B	930	210	8
F-77-C	970	220	8
F-165-A	900	220	9
F-165-B	880	220	9
F-165-C	890	210	8
F-200-A	790	200	15
F-200-B	730	200	14
F-200-C	730	200	14
E-77-A	ND	ND	ND
E-77-B	ND	ND	ND
E-77-C	ND	ND	ND
E-165-A	ND	ND	ND
E-165-B	ND	ND	ND
E-165-C	ND	ND	ND
E-200-A	ND	ND	ND
E-200-B	ND	ND	ND
E-200-C	ND	ND	ND

Concentrations in ug/l
ND = not detected, detection limit was 5 ug/l.

ENSR

ATTACHMENT 2

Gemeinhardt Site
Groundwater Recovery and Treatment System
Proposed Monitoring Plan
for Time Period Immediately Following Startup

The EPA Consent Order for the Gemeinhardt site dated February 1, 1990 and the approved ENSR Design Report dated June, 1991 provide information and requirements for the monitoring plan for the groundwater recovery and treatment system. CBS and its consultants are in the process of developing a detailed plan for monitoring and reporting of results for the project. However, this plan has not yet been finalized. Therefore, the following sampling and monitoring plan is proposed for the system for the first month following startup.

VOC Monitoring: Samples at 5 locations (RW-1, RW-2, RW-3, combined system influent and effluent) will be collected once per week for four weeks and analyzed for VOC by EPA Method 624.

Groundwater Level Monitoring: Groundwater level data loggers were installed in the three recovery wells and monitoring wells 5-5, 7-3, and 17-2. The data loggers are continually measuring the groundwater levels in these wells. Water level in the recharge well will be continuously monitored and recorded in the treatment plant data acquisition system. In addition, the groundwater levels in the other monitoring wells will be measured weekly for four weeks after startup. The data collected will be used to evaluate the capture zone of the system and make flow rate adjustments if necessary.

Reporting: Until a formal reporting format is established, the results of the monitoring during the first month of operation will be addressed in the monthly report to EPA.

The long-term monitoring and reporting plan will be submitted to EPA within one month of startup of the treatment system. The plan will include monitoring frequency, sample points, reporting frequency, and reporting format.

EXHIBIT

Nye #2
9/28/93 HBA

ENSR

ENSR Consulting
and Engineering
35 Nagog Park
Acton, Massachusetts 01720
(508) 635-9500
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ENSR Document No.: 3140-013-500
ENSR Reference No.: 220-DBU-308

February 8, 1993

Director, Waste Management Division
U.S. Environmental Protection Agency
Region V
230 South Dearborn Street
Chicago, Illinois 60604

RE: Gemeinhardt, Administrative Order Docket No. V-W-85-C-003
Monthly Progress Report

Dear Sir/Madam:

In accordance with the referenced Order, I have enclosed the progress report for the period January 1, 1993 through January 31, 1993.

Per my conversation with Ken Theisen of EPA Region V, this will be the final monthly progress report for the Gemeinhardt Groundwater Recovery and Treatment Project. Subsequent reporting to EPA on the operation of the system will be done in an annual report or on an as needed basis.

Should you have any questions please call.

Sincerely yours,

David B. Urban, P.E.
Senior Project Manager

Enclosure

cc:
Christopher P. Davis, Esquire - GPH
Joseph Horowitz, P.E. - CBS
Daniel W. Akin, P.E. - EIS
John Tielsch, Esquire - EPA
Kenneth Theisen - EPA
Catherine Daugherty, Esq. - IDEM
Reggie Baker - IDEM
Robert Clemens - ENSR

ENSR

PROGRESS REPORT

GEMEINHARDT ADMINISTRATIVE ORDER

DOCKET NO. V-W-85-C-003

SITE LOCATION: ELKHART, INDIANA

JANUARY 1 THROUGH JANUARY 31, 1993

1. **Progress this Period:**

The system was in continuous operation until the recharge well level rose to above the maximum level. The system was shut down, and the recharge well was acid cleaned. The system was restarted on January 7. Since then, the recharge well level steadily rose until shutdown was again necessary to avoid flooding of the well. Currently, we are determining causes of plugging and will restart the system when the run times between cleaning can be extended to reasonable lengths.

Water samples were taken on December 14, 21, and 28 from the recovery wells, stripper feed and effluent; all were analyzed for VOC. Results are summarized in the attached tables.

Baseline water level data received from recovery wells and three monitoring wells is being analyzed to evaluate normal fluctuations in water table due to pumping, rainfall, and groundwater flow.

Long-term monitoring plan is being prepared.

2. **Deliverables Submitted**

None.

3. **Critical Issues:**

Plugging of the recharge well is being investigated.

4. **Activities Planned:**

Recharge well plugging will be investigated. A plan to increase run time between cleanings will be developed.

Using water level data, the capture zone of each of the recovery well pumps will be evaluated. Flows will be adjusted as necessary.

The system monitoring plan and data collection format will be formalized.

A summary report will be prepared.

ENSR

5. **Schedule Changes:**

Scheduled startup and sustained operation of the system was mid-November, 1992, and actual startup was early December, 1992. Because of the problems with the recharge well, the startup summary report will be delayed, and is expected to be completed in March, 1993.

6. **Personnel Changes:**

none.

C-88-791
1-26-93

ATTACHMENT A
CBS, INC.
ELKHART COUNTY, IN

Summary of Analytical Results
12-14-92 Sampling Event
(ppb)(1)

ANALYTE	RW-1	RW-2	RW-3	INFLUENT	EFFLUENT	TRIP BLANK (5
1,1-Dichloroethane	23	13	24	18	ND(1)	ND(1)
1,1-Dichloroethene	350	86	78	160	ND(2)	ND(2)
Tetrachloroethene	ND(10)	ND(10)	1,670	440	1.2	ND(1)
1,1,1-Trichloroethane	620	190	190	310	ND(1)	ND(1)
Trichloroethene	100	140	14	85	ND(1)	ND(1)
c-1,2-Dichloroethene	ND(10)	ND(10)	ND(10)	ND(10)	ND(1)	ND(1)
tert-Butyl Methyl Ether	ND(20)	ND(20)	ND(20)	ND(20)	ND(2)	ND(2)

NOTES

(1) ND(1) = Not Detected at 1 ppb, ND(2) = Not Detected at 2 ppb.
ND(10) = Not Detected at 10 ppb, ND(20) = Not Detected at 20 ppb.

(2) Due to the presence of high levels of contaminants, samples RW-1, RW-2, RW-3, and Influent were diluted by a factor of 10 prior to analysis.

(3) The Maximum Contaminant Levels for these constituents are based upon November, 1992 listings as follows:

1,1-Dichloroethane	(not set)	The 70 kg Adult Lifetime Exposure
1,1-Dichloroethene	7 ppb	is not established.
Tetrachloroethene	5 ppb	
1,1,1-Trichloroethane	200 ppb	
Trichloroethene	5 ppb	
c-1,2-Dichloroethene	70 ppb	
tert-Butyl Methyl Ether	(not set)	The 70 kg Adult Lifetime Exposure is established at 40 ppb.

(4) [ ] = Detected, but below EQL and result shown is an estimate.

(5) Deionized water.

C-88-791
1-26-93

ATTACHMENT B
CBS, INC.
ELKHART COUNTY, IN

Summary of Analytical Results
12-21-92 Sampling Event
(ppb)(1)

ANALYTE	RW-1	RW-2	RW-3	INFLUENT	EFFLUENT	TRIP BLANK
1,1-Dichloroethane	18	8.3	22	14	ND(1)	ND(1)
1,1-Dichloroethene	270	44	41	110	ND(2)	ND(2)
Tetrachloroethene	ND(10)	ND(05)	1,340	380	[0.93]	ND(1)
1,1,1-Trichloroethane	770	200	200	350	ND(1)	ND(1)
Trichloroethene	130	150	22	100	ND(1)	ND(1)
c-1,2-Dichloroethene	ND(10)	8.0	ND(20)	ND(10)	ND(1)	ND(1)
tert-Butyl Methyl Ether	ND(20)	30	ND(40)	ND(20)	2.5	3.0

NOTES

(1) See notes on Attachment A.

C-88-791
1-2693

ATTACHMENT C
CBS, INC.
ELKHART COUNTY, IN

Summary of Analytical Results
12-28-92 Sampling Event
(ppb)(1)

ANALYTE	RW-1	RW-2	RW-3	INFLUENT	EFFLUENT	TRIP BLAI
1,1-Dichloroethane	26	9.5	30	16	ND(1)	ND(1)
1,1-Dichloroethene	430	74	60	160	ND(2)	ND(2)
Tetrachloroethene	ND(10)	ND(05)	1,560	410	ND(1)	ND(1)
1,1,1-Trichloroethane	960	170	180	320	ND(1)	ND(1)
Trichloroethene	150	130	ND(25)	100	ND(1)	ND(1)
c-1,2-Dichloroethene	ND(10)	7.0	ND(25)	ND(10)	ND(1)	ND(1)
tert-Butyl Methyl Ether	ND(20)	28	ND(50)	ND(20)	ND(2)	ND(2)

NOTES

(1) See notes on Attachment A.

EXHIBIT

Nye # 3
9/28/93 HBL

ENVIRONMENTAL AUDIT

GEMEINHARDT
DIVISION OF CBS, INC.
ELKHART, INDIANA

PROJECT: Environmental Audit
Gemeinhardt
Division of CBS, Inc.
Elkhart, Indiana

DATE: August 4, 1983

SUBMITTED BY: Environmental Instrument Systems, Inc.
1701 North Ironwood Drive
South Bend, Indiana 46635

H. Stephen Nye, P.E.
President

H. STEPHEN NYE
REGISTERED
No. 20154
STATE OF
INDIANA
PROFESSIONAL ENGINEER

1.0 INTRODUCTION

Environmental Instrument Systems, Inc. (EIS), South Bend, Indiana, was retained by the Gemeinhardt Division of CBS, Inc., to conduct an environmental audit at its Elkhart, Indiana, manufacturing facility.

The primary objective of the audit was to evaluate the existing plant operations and determine the extent of compliance with present environmental regulations.

Because the audit was conducted in a single day the primary focus was placed on environmental permit compliance and the review of manufacturing processes and operating practices related to the generation and disposal of waste material.

2.0 AUDIT PROCEDURE

The audit was initiated on July 28, 1983 with a meeting with Jim Klapp and Clark Hamilton. Company files pertaining to the Resource Conservation and Recovery Act (RCRA), Hazardous Waste Manifests and the Indiana Air Pollution Process Emission Permit were reviewed. An industrial hygiene study report on in-plant air testing for total particulates was also reviewed. Records on the chemicals used in production were checked to determine the specific chemicals and quantities purchased.

Production flow paths were reviewed using a plant layout drawing as a reference. Following this review a walk through plant tour was made with Mr. Hamilton. During this inspection, an attempt was made to give the same attention to details as a state or federal inspection.

Process operations were observed paying particular attention to the chemicals which were used in the process and the waste or wastewater which was generated. Area supervisors were asked to clarify any questions regarding their process operations. Additional questions raised by the inspection were answered by plant management. Information which was not readily available during the survey was to be obtained by plant management and forwarded to EIS. Plant management and supervisors were extremely helpful in answering questions and obtaining required information. Their assistance was appreciated.

A detailed description of the conditions found during the survey are presented in the following sections. During the plant inspection special attention was given to those areas where materials classified as hazardous were in use. Areas where the processes were capable of generating materials which could be considered contaminants if discharged to a subsurface wastewater disposal system were also carefully scrutinized.

3.0 AUDIT RESULTS

The areas where the potential exists for generating hazardous waste are:

1. Pickling/Degreasing Department
2. Sonic Cleaner

The area where wastes with the potential to contaminate groundwater if spilled on the ground or discharged to a subsurface disposal system are:

1. Press Room/Tumbling
2. Pickling/Degreasing Department
3. Manufacturing
4. Buffing
5. Sonic Cleaner

Table 3.1 lists the materials currently used in production, as determined by the audit.

3.1 Press Room/Tumbling Department

Parts are stamped out and sent to the degreasing/ cleaning area. The degreased parts are then returned to the Tumbling Department for deburring. Only silver soldered parts are tumbled. Lead soldered parts are not tumbled. Parts may be returned for tumbling during other phases of the manufacturing operation.

TABLE 3.1

PRODUCTION MATERIAL
CURRENTLY IN USE

Location	Material
Press Room/ Tumbling	719-NF Magnus Soap
Degreasing/ Pickling	Potassium Cyanide (200# on hand) Sodium Bichromate Enthone "Enstrip" Sulfuric Acid Nitric Acid Hydrochloric Acid Perchloroethylene (70,000 lbs purchased in 1982)
Manufacturing	All State Flux (For lead soldering, contains zinc chloride) Ultra Flux (For silver soldering, contains fluoride) Honing Machine Oil, Sunnen MB-30
Buffing	Safety Cool 808 (Strapping machine coolant) Rust Lick B-55 (Strapping machine rust inhibitor)
Sonic Cleaner	Perchloroethylene (Tetrachloroethylene)
Graviflo Buffing Machine	FF-14 Spin Finish Polishing Media (Wax coated ground corn cobs)
Instrument Cleaning	Lighter Fluid (naphtha) No. 7 W.S. Red Rouge (Iron oxide with animal wax binder)

Wastewater is generated in this area by the tumbling of parts with an abrasive media and a soap solution consisting of approximately 1 part Magnus Soap 719-N and 12 parts water. At the end of the tumbling cycle the water is dumped from the tumbler into a sump and pumped to a septic tank/dry well system.

The wastewater could be expected to contain solvent residue from the degreasing operation as well as copper, nickel, silver and chromium. The composition of the soap could not immediately be determined. This information should be requested from the soap manufacturer.

The presses used in the stamping operation use lubricating oils. This oil clings to the parts and is removed in the degreasing operation. There is no regular disposal of oil from the press operation.

3.2 Pickling/Degreasing Department

Instrument parts are sent to this department after stamping, soldering, machining and/or grinding. The various pickling operations are shown in Table 3.2.

TABLE 3.2

PICKLING DEPARTMENT
PARTS FLOW

Parts (Keys) → Hot Water (to remove flux) → Sulfuric Acid Sodium Bichromate → Rinse → Rinse → Tumbling

Parts (Bodys ready for buffing) → Enstrip (to remove lead solder) → Rinse → Chromate Bright Dip → Rinse

Parts (Body with lead solder not yet tumbled) → Potassium Cyanide → Rinse → Manufacturing

Parts (silver) → Sulfuric & Nitric Acid (to remove flux) → Rinse

Flowing rinses are used for all rinse tanks. Rinse water as well as any spills in this department are discharged via floor drains to a series of four dry wells. These dry wells discharge the wastewater to the subsurface soils and possibly to the shallow aquifer.

The Phillips Degreaser in this department uses the solvent "Perchloroethylene" (Tetrachloroethylene). The degreaser uses a combination of virgin and reclaimed solvents for parts cleaning. Solvent vapors are normally condensed back into the cleaning section of the degreaser. However, this degreaser can also be used to clean up used solvent for recycling. A valve can be operated which directs the condensed solvent to a collection sump. A portable pump is used to pump the solvent from the sump back into drums. This reclaimed solvent is then used to make up the solvent lost through drag out on the parts or evaporation to the atmosphere. The dirty solvent from the Sonic Cleaner is also reclaimed in this degreaser. The degreaser condenser cooling water is discharged to a pickle line rinse tank located in this department.

The sludge which remains after recovering the solvent is pumped into drums for disposal by Ashland Chemical Company the supplier of the virgin "Perchloroethylene".

3.3 Lead Soldering Department

Instrument parts soldered with lead use a flux containing zinc chloride. After soldering the parts are dipped in a small 1-2 gallon container of soap and water solution to remove the flux and retard oxidation. The soap is a liquid hand soap. The container of soapy water is dumped into the large circular wash basin located near the lunch room. The wash basin is believed to drain to a septic system on the south side of the plant. This wash water could be expected to contain lead, zinc and chlorides.

3.4 Manufacturing

Silver soldering and assembly of the instruments take place in this area. The soldering operation use a flux containing fluorides. Rinse water containing this flux is discharged to the same large circular wash basin as the lead soldering soap solution.

The manufacturing area also has a Sunnen honing machine. The quantity of honing oil and disposal procedure could not be determined.

3.5 Buffing Department

All of the buffing wheels have local exhaust hoods

which tie into central collection systems. Each of the systems discharge to a cyclone and baghouse to remove the particulate matter prior to returning the air back to the plant. Solids removed by the cyclones and baghouses are collected in drums and disposed at a sanitary landfill.

The buffing department also has a strapping machine (belt sander) which is used to remove material from the O.D. of silver and nickel - silver tubing to a predetermined diameter.

The strapping machine uses a coolant and rust inhibitor in a recirculating cooling system. The machine is cleaned prior to running silver tubing. The silver sludge is reclaimed when the production run is completed. When nickel - silver tubing is sanded, the metal sludge cleaned from the machine is dumped on the ground on the east side of the plant. About once/week approximately 20 gallons of the water soluble coolant is dumped into a floor drain in the Pickling/Degreasing Department. Those drains discharge to the series of four dry wells on the southeast side of the building. The coolant solution could be expected to contain oil and nickel and silver particles. The composition of the coolant and the rust inhibitor are unknown at this time.

3.6 Sonic Cleaner Department

The sonic cleaner uses only virgin "Perchloroethylene" solvent. The dirty solvent is pumped into drums which are moved to the Phillips degreaser for cleaning and recovery. The recovered solvent is mixed with virgin solvent in the Phillips degreaser.

The sonic cleaner is located over a floor sump. A drain in the bottom of the sump discharges to a gravel absorption bed on the east side of the building. Any solvent spilled into the sump will be discharged to the subsurface soils and percolate to the groundwater.

3.7 Graviflo Buffing Machine

The finished instruments are placed in this machine for a final buffing. The buffing media is ground corn cobs with a carnuba wax coating. The entire operation is dry. Approximately 50 pounds of the buffing media is removed and replaced daily. The waste media is dumped in a pile near the southeast corner of the property. Periodically, the material is trucked to a private site for disposal.

3.8 Instrument Cleaning Room

The final cleaning of the instruments is performed in this area. A buffing compound, No. 7 W.S. Red Rouge (animal wax binder and 99% pure iron oxide) is used here. Lighter fluid (naphtha) is also used in the final cleaning. The small quantities of lighter fluid either evaporate or is disposed as a residue on cotton swabs or rags.

3.9 Drum Storage

Drums were being stored at several areas around the plant. There was no identification of the areas and little, if any, on the drums which readily told of the type of storage or the contents of the drum.

3.10 Description of Wastewater Treatment Systems

A schematic drawing of the treatment and disposal systems at the plant shows three septic tank systems which receive sanitary wastewater from restrooms and sinks. One system is located on the southeast side of the plant, one on the southwest side and the third on the northwest side of the plant. All of the septic tank treatment systems use dry wells for disposal of the wastewater. This method of disposal depends on subsurface soil absorption to remove pathogenic organisms and other pollutants before the wastewater reaches the groundwater. The dry well is basically a seepage pit which allows the wastewater to seep out through openings in the dry well walls and infiltrate the surrounding soil. The groundwater in the area of the plant is 10-14 ft. below grade. The bottom of the septic tank is approximately 8 ft. below grade. Any contaminants present in the wastewater would have a very short distance to travel before reaching the groundwater. Process wastewater and any spill in the Pickling/Degreasing Department is discharged directly to a series of 4 (possibly 5) dry wells. This water

receives no treatment. The chemicals in the wastewater would not be removed by a septic tank system. Septic tanks are capable of removing waste material which can be biologically degraded. This does not include inorganic chemicals such as acids, bases or heavy metals or organic chemicals such as volatile organic solvents. The Elkhart County Health Department does not normally approve septic tank/dry well systems except in unusual circumstances. These would include replacing a failed absorption trench or bed with a dry well, or, approval of dry well when the available land area is too limited for trench or bed systems. When approved, septic tank/dry well systems are only to be used for the treatment and disposal of non-industrial sanitary wastewater. Under no circumstances does the county approve a dry well for the disposal of untreated process wastewater.

Table 3.3 lists the process wastewater sources and disposal systems.

3.11 Air Emission Permit

Gemeinhardt has a current Indiana Operating Permit for Air Emission Sources. The permit should be up for renewal in 1984. The State will send a renewal notice for another 4-year period. There have been some revisions in the State Permit Regulations and the

TABLE 3.3

PROCESS WASTEWATER SOURCES
and
DISPOSAL SYSTEMS

Process	Drain Location	Disposal System
Tumbler Wash Water	Press Room Sump	S.W. Septic Tank/Drywell
Degreaser Spills	Pickling/Degreasing Department	4, S.E. Drywells
Pickling Rinse	Pickling/Degreasing Department	4, S.E. Drywells
Pickling Dept. Chemical Spills	Pickling/Degreasing Department	4, S.E. Drywells
Strapping Machine Coolant	Pickling/Degreasing Department	4, S.E. Drywells
Lead Soldering Flux Rinse	Circular Wash Basin	S.E. Septic Tank/Drywell
Silver Soldering Flux Rinse	Circular Wash Basin	S.E. Septic Tank/Drywell
Sonic Cleaner Spills	Sonic Cleaner Sump	Gravel absorption bed N. of plant side

Gemeinhardt plant may be exempt from the requirement to obtain an operating permit. When the renewal application is submitted, an exemption should be requested on the following basis:

1. All air from the cyclone/baghouse dust collector systems is returned to the inside of the plant.
2. The make-up air furnace is fueled by natural gas.
3. The hot water boiler has natural gas as a primary fuel and No. 2 fuel oil as an emergency back-up fuel.

3.12 Occupational Safety and Health (OSHA)

In January 1982 an in-plant air survey was conducted by Continental Technical Services. Their tests for total particulate showed the plant to be well below the OSHA standards. Their recommendation for the use of a high efficiency particulate respirator for the personnel who clean the dust collectors has been implemented.

In addition, half-mask air-line respirators are located next to both the Sonic Cleaner and the Phillips degreaser. These are for use by personnel during the transfer of

solvents between the degreasers and drums.

The ventilation and make-up air systems appeared to operate quite well. The plant atmosphere was maintained noticeably free from odors and at a comfortable working temperature. This was particularly significant because the outside temperature was 100°F.

3.13 Water Supply

The existing water supply system consists of co-located two wells located northeast of the plant and one located on the east side. The north wells are supposed to supply the potable water system and the south well the process water system. These two systems were interconnected at the point where the pump discharge lines entered the plant. Valves in the line allow water to be transferred between the potable and process water systems. Clark Hamilton had a union in the connecting line opened to temporarily separate the two systems. At this time it is not known whether there are other locations where the two systems are interconnected.

The plants' well water is not being used for drinking water because of contamination by chlorinated volatile organic compounds. Bottled drinking water is being used by the plant personnel. The wells are only supplying restroom fixtures and process water.

The area around the Gemeinhardt plant has a large number of manufacturing facilities, all of which must use soil absorption systems for wastewater disposal. Many of the manufacturing operations are involved with metal cleaning and metal finishing. Under these operating conditions, in a highly permeable soil with a shallow water table, there is a very high probability of contamination of private residential, commercial and industrial wells.

4.0 Summary and Recommendations

The environmental audit at the Gemeinhardt indicates that the plant is in compliance with Indiana Air Pollution Control Board Rule 325IAC 2-1, formerly APC 19, operating permits.

The facility also submitted EPA Form 8700-12 Notification of Hazardous Waste Activity as required under Section 3010 of RCRA and has received an EPA Generators ID Number.

A 1982 in-plant air survey conducted by the company's insurance carrier indicated compliance with the OSHA "total particulate" Standard. Respirators are provided in areas where organic solvents are transferred and where dust collectors are cleaned. The plant ventilation and make-up air systems appear to be operating very effectively The plant atmosphere was noticeably above average in the control of odors and temperature.

The following sections provide a summary of recommendations in an order of relative importance for implementation.

4.1 Recommendations Requiring Immediate Action

1. The most significant problem defined by the audit relates to the use of septic tanks and dry wells for the disposal of process wastewater. The location of

floor drains in areas where chemical spills will be discharged to the soil and groundwater is directly related to the process wastewater problem. The characteristics of the wastewater which is generated by each process, that is, the volume of wastewater generated and the chemicals present is unknown at this time. It is recommended that a preliminary engineering study be conducted to determine the following:

- The characteristics of the waste and wastewater generated by each process. The relationship of the wastewater characteristics to the production schedule.

- The alternatives which are available for handling the individual or the combined process sources.

- The capital and operating costs of each alternative.

Among the alternatives the options include:

A. Elimination of all or part of the pickling operation at the State Road 19 location. Problem processes could possibly be relocated to the Gemeinhardt plant located within the city limits.

B. Evaluate alternatives which would allow continued use of the present operation. Among those which should be considered are

   a. Reduction in the volume of rinse water required.

b. Discharge all or part of the rinse water to a holding tank for off site disposal.

c. Treatment of the wastewater with disposal to a subsurface absorption system. This would require physical/chemical treatment of the wastewater which would have to meet drinking water standards before discharge.

2. Remove the spent potassium cyanide solution to an acceptable disposal facility.

3. Remove the sludge and spent liquid Perchloroethylene

4. Sample the sludge in the 4 (or 5) dry wells which receive the wastewater from the Pickling/Degreasing Department. The sludge should be analyzed to determine if it is a RCRA hazardous waste. The sludge should be disposed at an appropriate disposal site.

5. Sample the dry wells following the septic tanks located on the southeast and southwest side of the plant. If tests show the solids to be hazardous, the material should be pumped out and disposed as required by RCRA.

6. Discussions should be started with the City of Elkhart regarding connection to the Elkhart water system.

The Elkhart water would be used for all potable water requirements. The existing Gemeinhardt wells could be maintained to provide process water and possibly supply restroom fixtures. Because there are no accurate drawings of the water system piping, the actual piping layout will have to be determined.

7. Discussions should also be conducted with the City of Elkhart to determine the city's time schedule for extending sanitary sewers to the city limits. The city should also be questioned whether sewer users outside the city's corporate boundary would be permitted, and if so, at what cost.

8. Request all suppliers to provide information on the chemicals characteristics of the materials they are supplying. The information should include all data normally supplied by a "Material Safety Data Sheet" which conforms to OSHA requirements. In addition, the supplier should be requested to supply the concentrations of ingredients which are priority pollutants or which have the potential to contaminate drinking water if discharged to a subsurface absorption system. This would include chemicals such as phenols, cyanide and heavy metals.

   The Material Safety Data Sheets should be copied so that a complete set can be maintained by the individual responsible for safety.

4.2 Recommendations Requiring Action in the Near Future

1. The Pickling Department rinse tank supply lines were submerged in the rinse water. This condition is a cross connection and a violation of the Indiana Plumbing Rules and Regulations, Section 19-9-6. An air gap 2.5 times the supply line diameter should be provided between the supply line and the rinse tank. This air gap is to prevent contaminants in the rinse water from being sucked into the supply line if a negative pressure is applied to the line.

2. The present procedure of dumping the coolant from the Strapping Machine down the floor drain in the Pickling/Degreasing Department must be stopped. The procedure for disposing of the Honing Machine oil should be determined. If a licensed industrial waste disposal company is now handling the Honing Machine oil, they should be contacted regarding the disposal of the Strapping Machine coolant and any other waste oil generated at the plant.

   If no acceptable disposal source exists, then a licensed disposal company should be contacted. In order to facilitate the disposal of oils, a drum or some other storage container should be designated for <u>each</u> type of oil. The procedures listed in the Section "Recommendation of Labeling and Storage of Hazardous Waste" of this report should be followed.

3. Plug the drain in the Sonic Cleaner sump. This would require pumping any solvent which is spilled into the sump. An alternative would require the installation of a holding tank in place of the present gravel absorption bed.

4.3 Recommendation for Long Term Action

1. Much of the information requested during the audit was filed at different locations within the plant. A central file for all environmental records should be established. The file maintenance should be the responsibility of one member of the plant management staff. The file should include all information related to permits, studies, testing and systems pertaining to Air Pollution Control, Water Pollution Control, Water Supply, OSHA, and RCRA.

2. The supervision of the disposal of any waste material which has been determined to be hazardous should be the responsibility of one individual. The responsible person should be a supervisor.

4.3.1 Recommendation for the Labeling and Storage of Hazardous Waste

The requirements for labeling and accumulating hazardous waste prior to transportation are listed in Part 262 - Standards Applicable to Generators of Hazardous Waste. Following is a summary of the procedure which should be followed for labeling and storing the waste.

1. Inventory existing oils, solvents, metal cleaning and other process chemicals. Determine if the material is still used in production. If no future use is anticipated, dispose of the material now. Contact the manufacturer to determine if unopened drums can be returned. It may be possible to receive a credit from the manufacturer instead of paying a disposal company to remove the material.

2. Designate a specific location for temporary storage of hazardous waste material. Signs should be placed around the area to inform workers of the area use. Non Hazardous waste should be stored in at a separate location to prevent inadvertent confusion.

3. Spent waste material should be segregated and placed in separate drums. The segregation of the waste will make the task of locating a disposal facility a great deal easier. The reason for this is that disposal

facilities are approved for specific types of wastes. A disposal site which is approved for a waste containing heavy metals may not be approved for solvents or oil. Because of this a contract maybe required with several different disposal facilities.

4. Label each drum as to its contents and type of hazard in accordance with the Department of Transportation regulations on hazardous materials under 49 CFR Part 172. The label should have the name(s) of the major constituents such as trichloroethylene, or chromium sludge. If the contents of the drum are flammable a placard should also be attached to the drum to make workers handling the drum aware of the hazard. The labeling should be placed on the drum at its first use for waste storage.

5. Before transporting or offering hazardous waste for transportation off-site, a generator must mark each package of hazardous waste in accordance with the applicable Department of Transportation regulations on hazardous materials under 49 CFR Part 172.

   Before transporting hazardous waste or offering hazardous waste for transportation off-site, a generator must mark each container of 110 gallons or less used in such transportation with the following words and information displayed in accordance with the require-

ments of 49 CFR 172.304:

HAZARDOUS WASTE- Federal Law Prohibits Improper Disposal. If found, contact the nearest police or public safety authority or the U.S. Environmental Protection Agency.

Generator's Name and Address _____

Manifest Document Number _____

6. Before transporting hazardous waste or offering hazardous waste for transportation off-site, a generator must placard or offer the initial transporter the appropriate placards according to Department of Transportation regulations for hazardous materials under 49 CFR Part 172, Subpart F.

A generator may accumulate up to a total weight of 1,000 kilograms (2,200 pounds) of any hazardous waste or 1 kilogram (2.2 pounds of acutely hazardous waste (see Part 261.33) and store the waste without obtaining a storage facility permit.

The time period for the accumulation of wastes on-site begins when the total weight of the accumulated hazardous wastes exceed the applicable exclusion level (2,200 pounds or 2.2 pounds). If this weight is exceeded for 90 days then the generator is considered to be the operator of a storage facility and is subject to Parts 264 and 265, 266 and the permit requirements of Part 122.

The potassium cyanide used in the parts cleaning operation is classified as an acutely hazardous waste. When a waste solution containing 2.2 pounds of this material is accumulated, it must be disposed within 90 days. If not the plant would have to file for a storage facility permit.

The other chemicals used at the Gemeinhardt plant fall under the 2,200 pound limit. This weight of a solvent such as Perchloroethylene would be contained in three 55 gallon drums. The 90 day period begins when the accumulated wastes exceed the applicable exclusion limit. This would occur when the third drum (2,200 pounds) is placed in storage. If the drums are half filled with water or other non-hazardous waste, the non-hazardous material does not apply toward the 2,200 pound limit.

4.3.2 Container Disposal

The EPA does not regulate "empty" containers which have hazardous waste residues unless the residue is from acutely hazardous material listed in Part 261.33(e).

The definition of "empty" container is "one from which all wastes or other materials have been removed that can be removed using the practices commonly employed to remove materials from that type of container". In addition no more than one (1) inch of residue may remain on the bottom of the container for it to be considered empty.

If the container has more than one (1) inch of residue in the bottom it is subject to all of the hazardous waste regulations.

If the container held acutely hazardous waste (listed in Part 261.33(e) it may be considered "empty" and not subject to regulation if:

1. It has been tripled rinsed with an appropriate solvent or cleaned by another method to achieve equivalent removal.

2. If the container has an inner liner which has been removed.

Cyanide is listed in Part 261.33(e) and is therefore classified as acutely hazardous waste. All containers used for cyanide compounds by the Pickling/Degreasing department would fit that classification. If the containers are triple rinsed they can be disposed as non hazardous.